(17,816.)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1901.

No. 96.

CLARENCE M. BUSCH, APPELLANT,

vs.

JOSHUA W. JONES AND THE W. O. HICKOK MANUFACTURING COMPANY.

APPEAL FROM THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

INDEX.

JUDD & DETWEILER, PRINTERS, WASHINGTON, D. C., JUNE 22, 1901.

a *Transcript of Record.*

Court of Appeals, District of Columbia, October Term, 1899.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK MANUFACTURING Company. } No. 903.

Appeal from the supreme court of the District of Columbia.

Filed May 22, 1899.

b In the Court of Appeals of the District of Columbia.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES ET AL. } No. 903.

Supreme Court of the District of Columbia.

JOSHUA W. JONES ET AL.
vs.
CLARENCE M. BUSCH. } 15391. Equity.

UNITED STATES OF AMERICA,
District of Columbia, } *ss:*

Be it remembered that in the supreme court of the District of Columbia, at the city of Washington, in said District, at the times hereinafter mentioned, the following papers were filed and proceedings had in the above-entitled cause, to wit:

1 In the Supreme Court of the District of Columbia, Sitting in Equity.

JOSHUA W. JONES and THE W. O. HICKOK MANUFACTURING Company
against
CLARENCE M. BUSCH.

To the honorable the judges of said court:

1. Joshua W. Jones, a citizen of the State of Pennsylvania, residing at Harrisburg, in said State, and the W. O. Hickok Manufacturing Company, a corporation duly organized under the laws of the State of Pennsylvania and having its principal office and place of business at Harrisburg aforesaid, bring this bill of complaint against Clarence M. Busch, an inhabitant of the District of Columbia, and residing at Washington in said District. And thereupon your

orators complain and say: That prior to the 11th day of June, 1878, said Joshua W. Jones, being then a citizen of the United States, was the first, original and true inventor and discoverer of certain new and useful improvements in book-binders' dry press and sheet-tie, and of a certain new and useful process for treating folded sheets in dry-pressing, described in letters patent of the United States, dated June 11th, 1878, hereinafter mentioned, and which were not
2 known or used by others prior to his invention thereof, and had not been patented or described in any printed publication in this or any foreign country before the date of said invention or discovery thereof, and which were not and had not been at the time of his application for letters patent therefor, as hereinafter mentioned, in public use or on sale for more than two years.

2. That said Joshua W. Jones, being so as aforesaid, the first and original inventor and discoverer of said improvements and of said process, and being a citizen of the United States, and being desirous of obtaining the exclusive property to said invention or discovery within and for the United States, did on the 11th day of June, 1878, *did*, upon due application therefor, and having in all things complied with the conditions and requirements of the acts of Congress in such case made and provided, obtain letters patent of the United States for said invention or discovery, in due form of law, under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, being dated the said 11th day of June, 1878, and numbered 204,741, which said letters patent are now remaining of record in the Patent Office of the United States, by which said letters patent there was granted and secured or intended to be granted and secured to the said Joshua W. Jones, his heirs, executors, administrators and assigns, for the term of seventeen years from the said 11th day of June, 1878, the full and exclusive right and liberty of making, using and vending to others to be used, the said invention or discovery described in said letters patent; a certified copy of which said letters patent is here in court ready to be produced as your honors may direct.

3. Your orators further complain and say, that prior to the 26th day of May, 1891, the said Joshua W. Jones, being then a citizen of the United States, was the first, original and true inventor and discoverer of certain new and useful improvements in book-
3 binders' and printers' dry-pressing, sheet-tying, smashing and tableting machines, described in letters patent of the United States dated May 26th, 1891, hereinafter mentioned and which were not known or used by others prior to his invention thereof and had not been patented or described in any printed publication in this or any foreign country before the date of the said invention or discovery thereof, and which were not and had not been at the time of his application for letters patent therefor, as hereinafter mentioned, in public use or on sale for more than two years.

4. That said Joshua W. Jones, being so as aforesaid the first and original inventor and discoverer of said improvements and being a citizen of the United States, and desirous of obtaining the exclusive property in said invention or discovery within and for the United

States, did on the 26th day of May, 1891, upon due application therefor, and having in all things complied with the conditions and requirements of the acts of Congress in such case made and provided, obtain letters patent of the United States for said invention or discovery, in due form of law, under the seal of the Patent Office, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, being dated the 26th day of May, 1891, and numbered 452,898, which said letters patent are now remaining of record in the Patent Office of the United States, by which said letters patent there was granted and secured, or intended to be granted and secured to the said Joshua W. Jones, his heirs, executors, administrators and assigns, for the term of seventeen years from the said 26th day of May, 1891, the full and exclusive right and liberty of making, using and vending to others to be used, the said invention or discovery described in said letters patent; a certified copy of which said letters patent is here in court ready to be produced as your honors may direct.

5. And your orators further show that your orators did, for a valuable consideration, enter into an agreement in writing, 4 duly, signed, sealed and mutually delivered and dated the 27th day of December, 1889 (the application for said letters patent No. 452,898 being then pending in the Patent Office of the United States), wherein and whereby the said Joshua W. Jones granted unto the said The W. O. Hickok Manufacturing Company the exclusive license during the respective lifetimes of said letters patent to manufacture and sell to be used by others throughout the United States machines containing any of the processes, improvements or devices described and claimed in said letters patent Nos. 204,741 and 452,898, or either of them, and the said The W. O. Hickok Manufacturing Company agreed to pay to the said Joshua W. Jones a certain royalty for all machines manufactured and sold by it containing any of said processes, improvements or devices and on all supplies and appliances used in connection therewith and supplied by said company; an original or a duly authenticated copy of which agreement is here in court ready to be produced as your honors may direct.

6. And your orators further show that by reason of the said letters patent and the said agreement as aforesaid, the said Joshua W. Jones became and is now the sole owner of the said letters patent Nos. 204,741 and 452,898, and the said The W. O. Hickok Manufacturing Company, the exclusive licensee to manufacture and sell to be used by others throughout the United States machines containing the inventions or discoveries described and claimed in said letters patent, and that the said Joshua W. Jones and the said The W. O. Hickok Manufacturing Company are entitled to use, exercise and enjoy all the exclusive rights and privileges, profits and advantages, granted and secured, or intended to be granted and secured, in and by said letters patent for and during the respective lifetimes of said letters patent.

7. And your orators further show that the inventions or discov-

eries so patented as aforesaid and each of them are and
5 is valuable and useful to the public and that the public have generally acquiesced in the exclusive rights of your orators, and that your orators would, but for the wrongful acts of the defendant in this case and those acting in concert with him, have made large gains and profits from said inventions, which profits your orators have been hindered from making by reason of such wrongful acts.

8. And your orators further show unto your honors, upon information and belief, that the said Clarence M. Busch, well knowing the premises and the rights and privileges granted unto your orators and in order to deprive them of the profits, benefits and advantages, which might and otherwise would have accrued to them from said inventions and letters patent, after the execution of said agreement and before the commencement of this suit, as your orators are informed and believe, without license or consent, and against the will of your orators, and in violation and infringement of the aforesaid letters patent Nos. 204,741 and 452,898, at Harrisburg, in the eastern district of Pennsylvania, and elsewhere throughout the United States, did unlawfully and wrongfully and in defiance of your orators' rights and privileges, make or cause to be made and used or cause to be used the said inventions, and is now using or causing to be used within the territory above named presses containing the said inventions, the several inventions described and claimed in each of said letters patent being used conjointly in the same press, and has been and is now using in connection and combination with said presses the process of dry-pressing described and claimed in said letters patent No. 204,741, which said unlawful making or using and preparation to use are in violation and infringement of your orators' exclusive rights and privileges under said letters patent, by reason of which they have sustained and are still sustaining great loss and damage.

9. And your orators further allege that the said defendant has derived and received and is deriving and receiving from said
6 use great gains and profits, but to what amount your orators are ignorant.

10. And your orators specifically waive answer under oath to this bill of complaint.

11. And forasmuch as your orators can have no adequate relief except in this court, and to the end that the defendant may, if he can, show why your orators should not have the relief hereby prayed, and may according to the best and utmost of his knowledge, remembrance, information and belief, true, direct and perfect answer make according to the best and utmost of his remembrance, information and belief of the several matters hereinbefore averred and set forth, as fully and entirely as if the same were here repeated paragraph by paragraph; and that the defendant may be compelled to account for and pay to your orators the profits unlawfully derived from the violation of the rights of your orators as above and the damages suffered by your orators because of said infringements, and be restrained from any further violation of said rights, your

orators pray that your honors may grant a writ of injunction issuing out of and under the seal of this honorable court, perpetually enjoining and restraining said defendant, his agents, servants and workmen, from any further construction, sale or use, in any manner, of said inventions or improvements, or either of them, or any part thereof, in violation of the rights of your orators as aforesaid, and also requiring the said defendant to destroy or deliver up to your orators for that purpose any and all specimens of said inventions, or any part or parts thereof in the possession or use or under the control of the defendant. And also that your honors, upon entering a decree for infringement as above prayed for, may proceed to assess or cause to be assessed under your direction, in addition to the profits to be accounted for by the defendant as aforesaid, the damages your orators have sustained by reason of said infringement.

12. And your orators pray also for a provisional or pre-
7 liminary injunction to restrain and prevent the defendant from manufacturing, selling or using presses containing the said improvements, or any of them, and from using the said process during the pendency of this suit, and for such other and further relief as to your honors may seem meet and as the equity of the case may require.

13. May it please your honors to grant unto your orators a writ of subpœna, issuing out of and under the seal of this honorable court, directed to the said defendant, Clarence M. Busch, commanding him, by a day certain and under a certain penalty, to be and appear in this honorable court, then and there to make answer to this bill of complaint and to perform and abide by such order and decree as may be made against him. And your orators will ever pray.

JOSHUA W. JONES.
THE W. O. HICKOK MFG. CO.,
P'r L. S. BIGELOW, *Gen'l Man'g'r & Sec'y.*

M. W. JACOBS,
Solicitors and Counsel for Complainants.

STATE OF PENNSYLVANIA, }
County of Dauphin, } ss:

Joshua W. Jones, being duly sworn according to law, deposes and says that he is one of the complainants in the above case; that he has read the foregoing bill of complaint and noted the contents thereof, and that so far as the statements therein contained are within his own knowledge they are true, and that so *are* as they are derived from the information of others he believes them to be true.

And he further deposes and says that he verily believes that
8 he is the true, original and first inventor of the inventions patented to him, as set forth in said bill of complaint, and

that the said inventions or discoveries had not been in use or described before the invention thereof by him.

JOSHUA W. JONES.

Subscribed and sworn to before me, this 9th day of March, 1894.
[SEAL.] WM. M. HARGEST,
Notary Public.

8½ [Endorsed:] In the supreme court of the District of Columbia. Joshua W. Jones and The W. O. Hickok Manufacturing Co. *vs.* Clarence M. Busch. Bill of complaint. Robert Snodgrass, M. W. Jacobs, Harrisburg, Pa., complainants' solicitors and counsel.

9 *Answer of Clarence M. Busch, &c.*

Filed April 30, 1894.

The Supreme Court of the District of Columbia, Sitting in Equity.

JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Company *vs.* CLARENCE M. BUSCH. } No. 15391, Doc. 36.

Answer.

The answer of Clarence M. Busch, of Washington, District of Columbia, defendant, to the bill of complaint of Joshua W. Jones and the W. Hickok Manufacturing Company.

This defendant now and at all times hereafter saving and reserving to himself all and all manner of benefit or advantage of exception or otherwise that can or may be had or taken to the many errors, uncertainties or imperfections in said bill of complaint contained, for answer thereto, or to so much thereof as this defendant is advised is material or necessary for him to make answer to, answering, says:

1. That he has no knowledge, save from said bill of complaint, whether the coplaintiff, The W. O. Hickok Manufacturing Company, is a corporation doing business under and by virtue of the laws of the State of Pennsylvania, but leaves the complainant- to make such proof thereof as they may deem necessary.

1*a*. He is informed and believes that letters patent of the United States, No. 204,741, were issued to Joshua W. Jones on June 11, 1878, for a book-binder's dry press and sheet-tie, but denies on information and belief that the said Joshua W. Jones was the first, original and true inventor of the improvements or process set forth in the aforesaid patent and claimed therein, and he further denies that said alleged improvements or process was new or useful, or that the same had not been known or used by others prior to the alleged inven-

tion thereof by said Jones, or that the same had not been patented or described in any printed publication prior to his alleged invention thereof, and he further denies that the alleged improvements or process had not been in public use or on sale for more than two years prior to his application for letters patent therefor.

2. He is informed and believes that letters patent of the United States, No. 204,741, dated June 11, 1878, were issued to one Joshua W. Jones, purporting to grant unto said Jones, his heirs or assigns, for the term of seventeen years the full and exclusive right of making, using and vending to others to be used the alleged invention therein set forth, but is not informed, save by the bill of complaint, whether the said Jones complied with all the conditions and requirements of the then existing laws of the United States or whether said patent was issued in due form of law and leaves complainant- to make such proof thereof as they may.

3. He is informed and believes that letters patent of the United States, No. 452,898, were issued to Joshua W. Jones, May 26, 1891, for a dry-pressing, sheet-tying, smashing and tableting machine, but denies upon information and belief that the said Jones was the first, original and true inventor of the alleged improvements set forth in said patent and claimed therein, and he further denies that said alleged improvements were new and useful, or that the same had not been known or used by others prior to the alleged invention thereof by said Jones, or that the same had not been patented or described in any printed publication prior to his alleged invention thereof, and he further denies that the alleged improvements had not been in public use or on sale for more than two years prior to his application for letters patent therefor.

4. He is informed and believes that letters patent of the United States, No. 452,898, dated May 26, 1891, were issued to one Joshua W. Jones, purporting to grant unto said Jones, his heirs and assigns, for the term of seventeen years the full and exclusive right of making, using and vending to others to be used, the alleged invention therein set forth, but is not informed, save by the bill of complaint, whether the said Jones complied with all the conditions and requirements of the then existing laws of the United States, or whether said patent was issued in due form of law and leaves complainant- to make such proof thereof as they may.

5. That he is not advised, save by the bill of complaint, whether the said Joshua W. Jones did enter into an agreement in writing granting unto the said W. O. Hickok Manufacturing Company an exclusive license to manufacture and sell to be used by others throughout the United States, machines containing the processes, improvements or devices described and claimed in the letters patent Nos. 204,741 and 452,898, or either of them, but leaves the complainants to make such proof thereof as they may deem necessary.

6. That he is not advised, save by said bill of complaint, whether complainants are the sole owners and licensees, respectively, and are entitled to use, exercise and enjoy all the exclusive rights and privileges, profits and advantage, granted and secured, or intended to be granted and secured, in and by the letters patent Nos. 204,741 and

452,898, but leaves said complainants to make such proof thereof as they may.

7. He denies, upon information and belief, that the public have generally acquiesced in the validity of said patents Nos. 204,741 and 452,898, or either of them, or any of the alleged rights of complainants in and under said patents; and he further denies that said complainants have any right to or would, but for the wrongful acts of this defendant and those acting in concert with him, have made large gains and profits from said alleged inventions.

8. Defendant denies, upon information and belief, that he has in any manner or way whatsoever violated or infringed the said letters patent Nos. 204,741 and 452,898, or either of them, or
11 any legal or equitable rights secured to the complainants by reason of said patents, or that he intends so to do, either by making or using or causing to be used presses, or any device whatsoever containing or embodying, or having on them as a part thereof the alleged inventions described and claimed in said patents, or either of them; he further denies, on information and belief, that the press used by him in any manner whatsoever infringes the said letters patent, or either of them, or that he is using, or ever has used the alleged inventions patented as aforesaid, or that any actions or doings of this defendant work or ever *has* worked any injury to said complainants to deprive them of any gains or profits which they or either of them have or ever had a right to receive on account of said alleged inventions, or either of them.

8*a*. Defendant says that the press he is using is a patented one, and differs radically in construction and mode of operation from the alleged inventions shown, described, and claimed in the aforesaid patents, Nos. 204,741 and 452,898, or either of them.

8*b*. Defendant charges, on information and belief, that the claims of said patents, Nos. 204,741 and 452,878, are void, for that in view of the state of the art, at and prior to the date of the said alleged inventions, or either of them, by said Joshua W. Jones, it required no invention to produce same, and that the alleged improvements claimed in said patents are not patentable inventions within the meaning of the law.

8*c*. Defendant avers, on information and belief, that the letters patent, No. 204,741, is void, containing as it does two alleged separate and distinct inventions which are not in any way dependent upon each other.

8*d*. Defendant avers, on information and belief, that the features of the alleged inventions claimed in the two patents, Nos. 204,741 and 452,898, are incapable of a conjoint use in one press, and that said patents are improperly joined in this action.

8*e*. Defendant charges, on information and belief, that the claims of the said letters patent, 204,741 and 452,898, are void for that the alleged inventions, and the same principles and combinations, or every substantial and material part thereof shown, described and claimed therein as new, were prior to the date of the application for each of said patents, and the date of the said alleged inventions by

the said Joshua W. Jones shown, described and set forth in the following publications and letters patent of the United States, viz:

"A Manual of the Art of Book-binding," by James B. Nicholson, published at Philadelphia in 1856, page 43, *et seq.*

Patent No. 2113, granted T. G. Hardesty, May 27, 1841.

Patent No. 9324, granted D. Kellogg, October 12, 1852.

Patent No. 40336, granted W. R. Dingman, October 20, 1863.

Patent No. 48523, granted W. P. Craig, July 4, 1865.

Patent No. 58779, granted S. Cooley, October 16, 1866.

Patent No. 119.195, granted T. Stibbs, September 19, 1871.

Patent No. 125,786, granted C. Brown, April 16, 1872.

Patent No. 150,044, granted S. Hughes, April 21, 1874.

12 Patent No. 157,558, granted E. S. Watson, December 8, 1874.

Patent No. 169,518, granted C. Brown, November 2, 1875.

Patent No. 223,355, granted J. W. Jones, January 6, 1880.

Reissue patent No. 9598, granted J. W. Jones, March 8, 1881.

Patent No. 286,839, granted A. H. Merriam, October 16, 1883.

No. 367,897, granted M. F. Doud, August 9, 1887.

Patent No. 394,977, granted R. A. Hart, December 25, 1888.

Patent No. 181,389, granted J. B. Archer, August 22, 1876.

Also patented and described or contained in other letters patents, the dates and numbers of which defendant is not now able to specify but prays to be allowed to add hereafter by amendment or otherwise, if it shall become necessary.

8*f*. Defendant, on information and belief, says, that said Joshua W. Jones was not the original and first inventor and discoverer of any material or substantial part of the devices or process set forth and claimed in the aforesaid patents Nos. 204,741 and 452,898, but on the contrary thereof the same devices and process, in all material and essential features, had been, previous to the alleged invention of said Jones, known to and used by the following-named persons, and at the following places, viz: E. H. McKee, John J. Clifford and Charles G. Schrank, all residents of Philadelphia, State of Pennsylvania, and used at the book-bindery of John Palmer, at Philadelphia aforesaid; also known to and used by others, the names of whom, and their address and place of use this defendant is not now able to specify, but prays leave to be allowed to add hereafter by amendment or otherwise, if deemed necessary.

9. Defendant denies that he has derived and received and is deriving and receiving great gains and profits, or any gains or profits, by any unlawful use of the alleged inventions of complainants.

10. This defendant, further answering, denies each and every other allegation in the said bill of complaint contained and not hereinbefore admitted, controverted or denied, and this defendant prays the same benefits of the facts and things herein set forth, as if, for the reason thereof, the said bill had been demurred to where a demurrer would have been proper, and the same benefit thereof as if they had been specially pleaded in said bill.

11. This defendant submits to this honorable court that said complainants have no right to any further answer to said bill, or any

part thereof, and that they have no right to an injunction, account or other relief prayed for in said bill of complaint. All of which matters and things this defendant is ready and willing to aver, maintain and prove as this honorable court shall direct, and humbly prays to be hence dismissed with his costs and charges in this behalf most wrongfully sustained.

(Signed) CLARENCE M. BUSCH.
O. M. HILL,
Solicitor and Counsel.

13 CITY OF WASHINGTON, } ss:
District of Columbia, }

Clarence M. Busch, being duly sworn, deposes and says that he is the defendant in the above-entitled cause; that he has read the foregoing answer and knows the contents thereof, and that the matters and things therein set forth are true to the best of his knowledge, except as to the matters which are therein stated upon information and belief, and as to those matters he believes them to be true.

CLARENCE M. BUSCH.

Sworn to and subscribed before me this 28th day of April, 1894.
GEORGE C. AUKAM,
[SEAL.] *Notary Public, D. C.*

Replication.

Filed May 28, 1894.

In the Supreme Court of the District of Columbia, Sitting in Equity.

JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Company, Complainants, *vs.* CLARENCE M. BUSCH. } No. 15391, Docket 36.

The complainants hereby join issue with the defendant.
M. W. JACOBS,
Solicitor and Counsel for Complainants.

Amendment to Answer.

Filed October 26, 1894.

Supreme Court of the District of Columbia. In Equity.

JOSHUA W. JONES and THE W. O. HICKOK Mfg. Co. *vs.* CLARENCE M. BUSCH. } No. 15391, Docket 36.

Amendment to answer.

Now comes the defendant, by his solicitor and counsel, the court concurring, and by agreement of counsel for complainants, amends

his answer, paragraph "8*f*," page 6, by inserting immediately after the name of "Schrank," line 9, the name of "Frank E. Davis," who is also a resident of Philadelphia, Pa., and knew of the use alleged in said paragraph.

Defendant, by counsel, hereby consents that the replica-
14 tion already filed to original answer shall be considered a replication to this amendment unless complainant desires to further reply.

O. M. HILL,
Counsel for Defendant.

October 15, 1894.

It appearing to the satisfaction of counsel for complainant- that the matter incorporated by above amendment was not within the knowledge of defendant or his counsel at the time of filing his answer, it is agreed that said amendment may be entered and filed of record.

M. W. JACOBS,
Counsel for Complainant-.

In the Court of Appeals of the District of Columbia.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Company, Appellees.
} October Term, 1899. No. 903.

It is hereby stipulated and agreed by and between counsel for the parties hereto that "plaintiffs' (appellees') printed record," as used in the supreme court of the District of Columbia, including "Complainants' exhibits," which form the appendix to said record, may be substituted for pages 15 to 68 of the transcript of record furnished for use in this court, together with copy of patent No. 204,741, being "Complainants' Exhibit Jones' Patent No. 204,741."

CHAS. E. RIORDON,
Of Counsel for Appellants.
M. W. JACOBS,
Of Counsel for Appellees.

August 15, 1899.

(Endorsed:) No. 903. Court of Appeals, D. C., October term, 1899. Clarence M. Busch, appellant, *vs.* Joshua W. Jones and The W. O. Hickok Mfg. Co. Stipulation of counsel. Court of Appeals, District of Columbia. Filed Aug. 30, 1899. Robert Willett, clerk.

15 & 16 Supreme Court of the District of Columbia. In Equity.

J. W. JONES and W. O. HICKOK MANUfacturing Company
vs.
CLARENCE M. BUSCH.
} No. 15391, Docket 36.

Plaintiffs' Printed Record.

Robert Snodgrass, M. W. Jacobs, solicitors and counsel for plaintiffs.

17 Supreme Court of the District of Columbia. In Equity.

J. W. JONES and THE W. O. HICKOK MANufacturing Company
vs.
CLARENCE M. BUSCH.
} No. 15391, Docket 36.

Plaintiffs' Record.

HARRISBURG, PA., *September 20th*, 1894.

Testimony taken and proceedings had in the above-stated case, at the office of M. W. Jacobs, No. 222 Market street, Harrisburg, Pa., by stipulation of counsel and in pursuance of notice, before Frank E. Ziegler, notary public, as special examiner.

Appearances.

Robert Snodgrass and M. W. Jacobs, Esqs., for complainants.
O. M. Hill, Esq., for defendant.

Counsel for defendant hereby gives notice on the record that, at the hearing of this case, he will refer to the device shown and described in patent No. 204,741, as being in anticipation of the
18 device claimed in patent No. 452,898, both of said patents being before the court and set up in the bill of complaint.

Counsel for complainants offer in evidence letters patent No. 204,741, to Joshua W. Jones, for book-binders' dry press and sheettie, and the same is received and marked "Complainants' Exhibit Jones Patent No. 204,741."

Also certified copy of the articles of association of the W. O. Hickok Manufacturing Company, and the same is received and marked "Complainants' Exhibit Certified Copy of Articles of the W. O. Hickok Manufacturing Company."

Also contract between Joshua W. Jones and the W. O. Hickok Manufacturing Company, dated Dec. 27, 1889; and by agreement of counsel a copy compared by the examiner, is to be substituted in the record for the original, and marked "Complainants' Exhibit Contract of Jones and Hickok Manufacturing Company;" the original to be produced when called for.

WILLIAM HAYES GRIER, a witness on behalf of complainants, being produced, affirmed, and examined, deposes and says:

Examined by Mr. JACOBS:

Q. 1. State your age, occupation, and place of residence.

A. I am fifty-three years of age; occupation printer; residence, Columbia, Penna.

Q. 2. What official position, under the State of Pennsylvania, do you at present occupy?

A. I am superintendent of public printing.

Q. 3. How long have you occupied that position?

A. Since the first of April, 1892, under the present appointment

Q. 4. Who does the printing and binding of public documents for the State of Pennsylvania?

A. Clarence M. Busch.

Q. 5. Where is his establishment?

A. Near the corner of Herr and Elder streets.

Q. 6. In what place?

A. In Harrisburg.

Q. 7. What are your duties in connection with the public printing of the State and in connection with Mr. Busch's establishment?

A. I receive all orders for printing from all departments
19 and make duplicates of them for the State printer, specifying how and in what manner the work is to be done. I have no supervision of Busch's establishment beyond the work he is doing for the State. My one duty is particularly to see that everything is done according to contract.

Q. 8. Do the duties of your office take you to Mr. Busch's establishment, and if so, how frequently?

A. Several times a day and pretty nearly every day in a week.

Q. 9. Please state whether or not the sheets of the work done by Mr. Busch for the State are required to be put through the process known in the art as dry-pressing.

(Objected to as leading.)

A. They are.

Q. 10. Please state whether or not the sheets of the work referred to are, as a matter of fact, dry-pressed at Mr. Busch's establishment.

(Same objection.)

A. They are.

Q. 11. Will you now describe by what means and in what manner the dry-pressing is there done?

A. After the sheets are folded into signatures they are placed between boards and put into the dry press and pressed, and then tied with heavy twine while the pressure is on, and then removed for binding.

Q. 12. What kind of boards are used?

A. I don't know what the material of the board is,—I never examined that,—but as large as the signature of the paper when folded, and probably an inch and a half or two inches thick.

Q. 13. Are any fuller-boards used?

(Objected to as leading.)

A. No, sir. Nothing but the boards at the top and bottom of the signatures, a wooden board.

Q. 14. About how many sheets are put in the press at one time?

A. That I do not know,—the number,—but the length of the pile, or the height of the pile between boards runs from eighteen to twenty-four inches. They are never counted when put in.

Q. 15. In referring to the length of the pile do you mean when the sheets are put into the press?

20 A. No, sir. I mean after they are tied.

Q. 16. How long are the sheets thus compressed allowed to remain in bundles?

A. The time varies. Whenever they want to use them after a book is completed, the sheets last run off of the printing press do not remain in bundles as long as those first run off; but in nearly every book that we print the first signatures remain in bundles from three to six weeks.

Q. 17. And the last, how long?

A. The last may remain, in cases of necessity, not more than twenty-four hours. What I mean by necessity is haste to get out the book.

Q. 18. What is the purpose of allowing the sheets to remain thus tied in bundles under pressure for twenty-four hours or longer?

A. To remove the heavy impression that may have been made on the printing press and to give the paper more solidity. It takes out all indentations.

Q. 19. What do you understand by the term dry-pressing as used in the art of printing?

A. Removing the heavy impression made by the printing press. Making the paper with a clear surface.

Q. 20. What do you mean by clear surface?

A. Smooth surface, I mean, instead of clear surface.

Q. 21. Is there any provision of the law under which the State printing is done, requiring the dry-pressing of the work?

(Objected to as leading and immaterial.)

A. Yes, sir.

Q. 22. When did Mr. Busch begin to do the printing for the State?

A. The 1st of July, 1893.

Q. 23. Do you know the name of the machine upon which the dry-pressing, which you have described, is done in Mr. Busch's establishment?

A. I only know that an inscription on the machine says that it is built by the Seybold Machine Company of Dayton, Ohio.

Q. 24. How long has Mr. Busch had it there?

A. I do not remember the exact time, but he put it in late in 1893.

21 Q. 25. When, if you know, did he do the first dry-pressing with it?

A. That I don't know. I can't recall.

Q. 26. Has he any other machines for dry-pressing there?

A. No, sir.

Q. 27. Has or has not all the work he has done for the State since he has had the machine been dry-pressed?

A. Yes, sir.

Q. 28. I hand you two sheets of signatures 15 and 15* and ask you to state whether or not either or both of them have passed through the process of dry-pressing.

(At request of complainants' counsel the sheets referred to are marked respectively "A 15*, A 15, B 15, and B 15*.")

A. A 15 and A 15* have been dry-pressed; B 15 and B 15* have not been dry-pressed.

Q. 29. You have said in your answer to question 3 that you have been superintendent of public printing since April 1st, 1892, under your present appointment. Have you at any time occupied the same position under any other appointment?

A. Yes, sir. I was superintendent of public printing from Aug., 1883, until the 1st of July, 1889.

Q. 30. Who were the contractors for the State printing during that term and also during your present term, prior to the date when Mr. Busch's contract began?

A. Lane S. Hart was State printer when I was first appointed in 1883, and from the 1st of July, 1885, to the 1st of July, 1889, E. K. Meyers was State printer. and C. M. Busch State binder. The work was divided during that time. E. K. Meyers was State printer when I commenced my present term until the 1st of July, 1893; he was succeeded then by C. M. Busch.

Q. 31. Was the work of the State dry-pressed during your official terms by the several contractors whom you have named?

A. Yes, sir.

Q. 32. By what means?

A. In the same manner it is being done today.

Q. 33. Please state by what machine or machines, if you know.

A. By the Jones machine.

Cross-examined by Mr. HILL:

X Q. 34. How long have you been engaged in the printing or bookbinding business?

22 A. I have been in the printing business since 1856.

X Q. 35. Have you been in business for yourself?

A. I have, since 1873.

X Q. 36. Where were you engaged in business in 1873?

A. Columbia, Penna.

X Q. 37. Did you at that time have any means for dry-pressing printed signatures, and if so, of what did the means consist?

(Objected to as not proper cross-examination.)

A. We had a dry press with fuller-boards about 22 by 28 and laid the sheets on the board and pulled a screw down, an upright machine with a screw, but it is not for signatures. It was for bill-heads and letter-heads of a commercial nature.

X Q. 38. During the year 1873 did you have any occasion to handle printed signatures for books?

(Objection continued.)

A. Nothing, unless it might have been constitutions and by-laws for local lodges.

X Q. 39 Have you any personal knowledge of printed signatures ever having been dry-pressed during the year 1873, or prior thereto?

(Objection continued.)

A. No; I don't.

X Q. 40. Do you know whether or not, during the year 1873 and prior thereto, indentations from printed matter where removed or pressed out?

(Objection continued.)

A. At that time we did use a screw-press with fuller-boards to take out indentations from bill-heads, letter-heads and circulars.

X Q. 41. When did you first work on printed signatures for books?

(Same objection.)

A. I have never outside of my own office worked on printed signatures.

X Q. 42. When did you first do such work in your own office?

(Same objection.)

A. I couldn't give any date when I first did any work of that kind. I can when I last did work of that kind.

X Q. 43. Can't you give the approximate date?

A. No, sir.

23 X Q. 44. Can you come within one year of it?

A. I cannot.

X Q. 45. Can you come within five years of it?

A. No, sir; but I can come within ten years of it. I did a book last week, a copy of which had my imprint on, done in 1883.

X Q. 46. In the art of bookbinding what do you understand by the term "fuller-boards"?

A. They are a heavy board. I can't describe it. I am not a bookbinder by occupation and know nothing about the binding of books, except what I have picked up as superintendent of public printing. The boards used in the dry press we had in those days they called "fuller-boards." That is all I know about them. They were in the office when I went there.

X Q. 47. What time was this?

A. In the printing office in Columbia.

X Q. 48. How or in what manner were these boards used?

(Objected to as not proper cross-examination.)

A. We had large fuller-boards, as they called them. We would take one, lay it down and take letter-head after letter-head and lay them across until we covered the whole surface. Then we would place a board on top of that and repeat the process, until we had the boards all used. The press was upright with a spiral screw, coming right down onto the top. In that screw there were large holes, in which we would place an iron bar and then screw it down until we got the pressure that we wanted.

X Q. 49. How long did you use these fuller-boards?

A. I did not use them more than three months, because I then purchased a Gordon press that did the work without any necessity of removing the impression.

X Q. 50. You state in answer 15 that signature marked "A 15*" has been dry-pressed. Please state, if you know, on what press this signature was dry-pressed.

A. Well, I didn't see it dry-pressed, and this printing is done by Mr. Busch, and I judge from that that it has been done on the machine used in his office.

X Q 51. Has the work done by Mr. Busch, on the press in his office, proven satisfactory?

(Objected to as immaterial and not proper cross-examination.)

A. Yes, sir.

24 X Q. 52. In answer 33 you speak of the Jones machine. What kind of machine do you refer to?

A. A dry press.

X Q. 53. How or by what means is this press operated?

A. By a screw, the same as the one we have up in the office, with the signatures placed between boards and tied when pressed.

Redirect examination by Mr. JACOBS:

Q. 54. *De bene esse.* Referring to your answer to question 48 how long was it necessary to leave the letter-heads in the press between the fuller-boards in order to remove the indentations?

A. We would leave them in over night.

Q. 55. How long is it necessary to leave the signatures in the dry press used in Mr. Busch's establishment?

A. Only long enough to tie them. They put in a lot of signatures, press it, put in some more and press it and keep on putting in until they have got the proper length of pile they want and the process goes on until the whole signature is pressed; it is done quickly.

Q. 56. Please answer the same question with regard to the Jones dry press, which you have testified was used by Mr. Busch's predecessors.

A. I have seen that press, but never in operation. Have seen nothing but the bundles as tied.

Recross-examination by Mr. HILL:

X Q. 57. In your redirect answer 54, with reference to the old press used by you, you state that it was necessary to leave the printed matter in the press over night. Was this absolutely necessary?

A. It was. We would either put them in at night and leave them in until morning or put them in in the morning and leave them there until evening. We had to do it that way when we had a good many to do.

X Q. 58. What would you do with the printed matter after it was pressed?

A. I would take it out of the press and deliver it to the customers, if that is what I understand you to mean. This refers to commercial work entirely.

Re-redirect examination by Mr. JACOBS:

Q. 59. Taking the sheets out from between the fuller-boar
25 involved about the same amount of labor as putting them i
did it?

A. Just the same.

WM. HAYES GRIER.

Sworn and subscribed before me this 20th day of Sept., A. I
1894.

FRANK E. ZEIGLER,
Special Examiner.

E. S. B. MILLER, a witness on behalf of the complainants, bein
produced, affirmed and examined, deposes and says:

Examined by Mr. JACOBS:

Q. 1. State your age, occupation, and place of residence.

A. 40 years of age, cabinetmaker by trade, Harrisburg.

Q. 2. Where are you employed at present?

A. By the W. O. Hickok Manufacturing Company.

Q. 3. Will you look at the article which I now place before yo
and state if you know who made it, and what it is?

A. I made it. It is a model of the press,—that is the trough pa
between the heads, and the heads,—in the State bindery, corner
Herr and Granite avenue, Harrisburg, Pa.

Q. 4. When did you make it?

A. Commenced it at 9 o'clock on the 23d of last June.

Q. 5. State whether or not it was made from measurements mad
by you of the press referred to by you in your last answer.

A. It was.

Q. 6. Is it made to a scale or not?

A. It is not. The heads two ways are half size. The carrier rod
are half size. The rods that represent the screws are not. They ar
just in for supports. I mean by those the three large rods that kee
the heads in place.

Q. 7. Are the large openings in the heads made to a scale or not

A. Near about half size.

Q. 8. How accurately does this model represent the correspondin
parts of the press to which you have referred?

A. This model does not represent any of the operative mechan
ism of the press, simply the way the signatures are placed in, presse
and tied.

26 Q. 9. How closely do the heads of the model correspon
with the heads of the press?

A. They are very accurate.

Q. 10. How accurately does the arrangement of the three large
rods in the model represent the arrangement of the corresponding
rods of the press?

A. As near as half size can be made — represent.

Q. 11. I notice a number of small holes in the two heads of th

model. Please state how closely they represent in size and arrangement similar holes in the press.

A. They are half size and represent the holes in the press.

Q. 12. Will you describe in a general way the operative mechanism of the press which you say is not shown in the model?

A. The upper head is adjusted near the lower head by a- endless chain running on chain gears running on the three heavy screw-rods that support the head, by a lever fastened on the top part of the head. The power is by a double and single knuckle-joint straightening out, and released by coming together or doubling up, worked by a screw four inches in diameter.

Q. 13. To what is the power referred to in the last sentence of your last answer applied?

A. To the process of the lower head pressing the paper against the upper head.

Q. 14. Have you any other illustration of the press referred to by you, which you have compared with the press itself?

A. Yes, sir.

Q. 15. Please produce it.

(Witness produces paper which counsel for complainants ask to have marked for identification, "Wood cut of signature press.")

Q. 16. State whether or not your comparison satisfied you that the wood cut produced is an accurate representation of the press to which you have been referring in your testimony.

A. It's a fac-simile of the press.

Q. 17. You have spoken of the establishment in which you saw the press as being located on Herr street, in this city. Do you know by whom that establishment is owned or controlled?

A. I do.

27 Q. 18. By whom?

A. Clarence M. Busch.

Q. 19. Did you observe any markings on the press?

(Objected to as immaterial.)

A. Name plate, "The Hercules, patented March 22, 1892. Designed and built by the Seybold Machine Company, Dayton, Ohio, U. S. A."

Q. 20. Did you at any time see the press in operation there?

A. I did; three times.

Q. 21. When?

A. The 19th of June last, and the 18th and 20th of this month.

Q. 22. Referring now to the first time, what work did you then see done upon it?

A. They were pressing signatures, but being State work I don't know what they were.

Q. 23. How were they pressing signatures? Please describe the operation as fully as you can.

A. They first put in a board and put the signatures in, put a board in against the other head, and run their press up until it was tight,

tied the bundles together by a rope over the boards and took them out and set them aside into the bundles.

Q. 24. Do you know how many signatures were put into the machine for one operation?

A. Well, probably three hundred. In that neighborhood; I wouldn't be positive about the exact number.

Q. 25. Were they much or little compressed by the action of the machine?

A. About nine inches, I guess.

Q. 26. What was the length of the trough between the heads before the sheets were put in?

A. Twenty-nine and one-eighth inches between the heads.

Q. 27. What was the length of the bundle after it had been subjected to pressure?

(Objected to as immaterial.)

A. The bundles varied, from fourteen to eighteen inches.

Q. 28. Was the trough between the heads filled up with sheets?

(Same objection.)

A. Once they were. I wanted to see for myself the amount
28 of pressure that it had and the young man filled it up for me once.

Q. 29. I now hand you the sheets, which have heretofore been marked for identification "A 15, A 15*, B 15 and B 15*," and ask you to say whether you ever saw them before and what you know about them.

(Objected to as the witness has not qualified himself as as expert in regard to printed signatures.)

A. Well, "B 15 and B 15*" was pressed in a bundle on the 18th of this month and immediately taken out of the press before tying up the bundle by myself. "A 15 and A 15*" was taken out of a bundle by me, laying up in the bindery since Saturday. I took it out today. The bundle was laying in the bindery since Saturday.

Q. 30. Do you mean by the first part of your last answer that B 15 and B 15* were pressed by you, or that you merely took them out of the bundle.

A. I mean I took the signature out of the bundle.

Q. 31. By whom was the pressing of that bundle done?

A. I don't know the young man's name. I wasn't acquainted with him. The young man that runs the press; I don't know his name.

Q. 32. You have spoken of several small rods in the press which are represented by the three small rods in the model; please tell us how they were attached to the press and what became of them when the heads were moved closer together, in the operation of pressing.

A. They were fastened in the lower head by a thread that screwed

in as if into a nut. They ran up through the holes in the upper head.

Q. 33. What use, if any, was made of the rods during the operation of pressing?

A. The only support the signatures have, to hold them in place.

Q. 34. How did the signatures rest upon them?

A. They rest on the two lower ones and against the back one.

Q. 35. How were the sheets placed with reference to their length and width?

A. The width is placed up and down in the trough, the length cross-wise.

29 Cross-examination by Mr. HILL:

X Q. 36. In the press which you saw at Mr. Busch's establishment, were the three large rods upon which the heads are mounted, screw-threaded for a larger portion of their distance between said heads as shown in wood cut of signature press?

A. Yes, sir.

X Q. 37. Then this model which you made does not correctly represent this feature of those rods, does it?

A. Not on the screw.

X Q. 38. In the operation of pressing a bundle of papers as witnessed by you in the establishment of Mr. Busch, did the lower edge of the signatures come into contact with either of the large screw-threaded rods?

A. The space in between them is larger than the signatures they were pressing and the carrier rods were above the screws.

X Q. 39. In speaking of the press at Mr. Busch's place of business you stated in A. 28, "I wanted to see for myself the amount of pressure it had." Why did you want to see the amount — pressure it had?

A. Well, it was more for my own satisfaction. When I am around work being done I like to see the process of the work. I had never seen the press run. I didn't know there was any suit or anything of the kind at the time.

X Q. 40. Did you find out the amount of pressure it had?

A. Just by the space it pressed up.

X Q. 41. Then you don't know anything about it—how many pounds pressure there was?

A. No, sir.

X Q. 42. How came you to go to Mr. Busch's place of business, and for whom did you make this model?

A. L. S. Bigelow, superintendent of the Hickok Manufacturing Company, where I am employed.

X Q. 43. How came you to go to Mr. Busch's place of business today?

A. I was requested to go there by the parties I worked for and by Mr. Jones and get a signature if I could out of the bundle I saw them press on Monday, as I had marked it on Monday when I was there.

X Q. 44. Did Mr. Jones or any one request you to watch the operation of the press—observe its workings?

A. Not that I know of, though I told him that I had seen it operated.

X Q. 45. Do the two lower small rods in the model correctly represent the location of the two small rods in the press with reference to the top edge of the two large rods at bottom, which support the heads in the press at Mr. Busch's establishment?

A. No, as the rods representing the screw-rods in the model is acting as supports for the head. The rods in the model stand up a little higher than in the press.

X Q. 46. Do the small openings in the heads of this model correctly represent the number and location of the openings in the heads of the press in Mr. Busch's establishment?

A. Yes, sir.

X Q. 47. The only feature, then, that is represented in this model as being analagous to like parts in the Busch press, consists of the three small rods mounted within openings in the two movable heads. Is this correct?

A. No, the arm-holes, the cross-openings for ropes are exactly like the Busch press.

X Q. 48. Please state just how far this model and what parts therein correctly represent like parts, and their location in the press at Mr. Busch's place of business.

A. Well, the shape of the head, the hand or arm hole, the cross-openings, the holes in the head and carrier rods that support the signatures.

X Q. 49. Are these all the parts in the model which correctly represent like parts in the Busch press?

A. All that I worked special on. There may be others, that I didn't bother with.

Adjourned to Sep. 21st, at 10 o'clock a. m.

SEPT. 21ST—10.30 a. m.

Met pursuant to adjournment.
Present: Same counsel.

Cross-examination of E. S. B. MILLER resumed by Mr. HILL:

X Q. 50. In the model made by you I notice that the lower openings in the two heads for the small rods are entirely beneath a plane with the top of the two lower large rods which support
31 the head. I will ask you whether or not the lower openings in the two heads of the Busch press are beneath a plane with the top of the two lower large screw-rods which support the heads of said press.

A. No. In the model the large rods don't represent the large rods in the press.

X Q. 51. Is it not a fact that in the Busch press the lower openings in the two heads for the small trough rods are located some

distance above a plane, with the top of the two large lower screw-rods, which support the heads?

A. They are raised enough above for clearance.

X Q. 52. This model, then, does not correctly represent the location of the lower openings in the heads with reference to the screw-rods in the Busch press? Does it?

A. Not in reference to the screw-rods. No, but in reference to the head they do.

Redirect examination by Mr. JACOBS:

Q. 53. I would like to get before the court distinctly the extent to which the model does not accurately represent Mr. Busch's press, with special reference to the position and arrangement of the three large rods supporting the heads, and I will therefore ask you to describe as fully as you can the arrangement of those rods in the press with relation to each other and with relation to the lower set of small holes in the head?

A. The inside of the upper large rod lies nearly on a line with the end of the head, with the outer edge of the head. And the outer edge of the back lower rod is nearly on a line with the inside of the upper rod. The front lower rod lays about two-thirds outside of the line of the head. And both the lower rods lays on a line below the lower edge of the head.

Q. 54. If you can make a sketch of the location of the larger rods, with reference to the head and their arrangement with relation to each other, will you please do so? Adding, if you please, the lower line of holes with reference to the two lower large rods?

(Witness makes and produces sketch, which is offered in evidence, and marked "Complainants' Exhibit Miller Sketch.")

A. This is a cross-section taken through the supporting rods, looking down on the face of the lower head of the Busch press, from a point at the upper end of the press.

32 Q. 55. I observe that the number and arrangement of the small holes in the upper head of the signature press in the wood cut which has been produced and marked for identification differ from the number and arrangement of the small holes in the corresponding head of the model. Does the wood cut or the model correctly show the number and arrangement of the corresponding holes in the Busch press?

A. The arrangement of the model represents the Busch press, with the exception of the one hole. But the sketch that I have made is a description of the hole in the Busch press. The hole marked X on the sketch was filled up when I was there.

E. S. B. MILLER.

Affirmed and subscribed before me, this 21st day of Sept., A. D. 1894.

FRANK E. ZIEGLER,
Special Examiner.

Complainants' counsel offer in evidence the paper heretofore marked for identification as "Wood cut of signature press," to be marked "Complainants' Exhibit Wood Cut of Seybold Signature Press."

Also offer in evidence the model testified to by the last witness, to be marked "Complainants' Exhibit Model No. 1."

Also offer in evidence the printed sheets heretofore marked for identification respectively as "A 15," "A 15*," "B 15" and "B 15*," to be marked respectively "Complainants' Exhibits Printed Sheets A 15, A 15*, B 15 and B 15*."

JOSHUA W. JONES, a witness on behalf of the complainants, being produced, sworn and examined, deposes and says:

Examined by Mr. JACOBS:

Q. 1. Please state your age, occupation and place of residence?

A. I am sixty-three years old; I have no special occupation at this present time; I served an apprenticeship at bookbinding and have a thorough knowledge of the art of printing, having managed one of the largest printing and binding establishments in central Pennsylvania, and have been interested in the same. I have been also the superintendent of public printing and binding of the State of Pennsylvania nine or ten years. Place of residence, Harrisburg, Pennsylvania.

33 Q. 2. Are you the same Joshua W. Jones to whom the letters patent here in suit were issued?

A. I am.

Q. 3. And one of the complainants in this case?

A. I am.

Q. 4. Have you ever visited the printing establishment of Clarence M. Busch, the defendant in this case?

A. I have.

Q. 5. Where is it and when did you first visit it?

A. It is located on Herr street, between Third and Sixth streets, Harrisburg, Pa. I first visited it on the 28th day of November, 1893.

Q. 6. Was any work going on at that time which particularly attracted your attention?

A. Yes, sir.

Q. 7. What was it?

A. It was the folding of sheets and the putting them through a dry press similar to a machine or press for which I have patents. I recognized the press as the Seybold from having seen cut of the same.

Q. 8. Please describe the dry press which you saw there as fully as you can.

A. I found it was a machine. It was formed of rods, head and foot blocks having cross-ways in them, also large holes in said head and foot blocks through which you could pass the hand and forearm. The top head was movable or adjustable by means of a crank, sprocket wheels and drive-chain. The lower or pressing block was

moved by means of a screw and three toggle joints. The balance of the machine I did not particularly examine, except I noticed that it was driven by a belt or belts. I don't remember whether there was one or two belts. I also noticed the three adjustable rods, the same as in my machine used for centering the work when smaller or intermediate sizes of sheets, less in size than the trough formed by the large rods, are pressed. I also saw the operator place an end board in the trough of the machine, that is the rods forming the trough. He then proceeded to fill the trough with folded printed sheets—the entire space between the lower and upper blocks—and placed an end board at the top of the pile of sheets between the sheets and the upper head block, when he put on
34 the power which drove the lower head block towards the upper. He then took a cord, such as comes around the paper from the mill, and proceeded to tie said sheets two ways, that is, cross-ways, crossing them on the ends of the bundles. This was done by taking the cord, which had a loop in one end and which was held in one hand, and the cord pushed by the hand and forearm through the opening in one of the heads, taken by the other hand and carried to the other head and in like manner pushed through the other hole in the other head, the cord then slipped through the loop on the end, the cord then brought through the large hole and passed over the bundle and through the large hole in the other block, then brought down to the other block and passed in the large opening and there looped around the cord, which had formed a junction, then tied, and the bundle immediately removed from the press. I saw them fill the press several times and go through the operation several times. The large holes through which passed the hand and forearm correspond with the cross-way openings where the cord ties over the ends of the bundles.

Recess until 2 p. m.

2 P. M.

Examination of Joshua W. Jones continued.
Present: Same counsel.

Witness continues his answer to Q. 8:

A. The bundles of sheets were tied while the pressure was on them. The pressure was retained by means of the tie, the bundles removed from the press and set aside to complete the process of dry-pressing; that is, the smoothing of the sheets, and removing the indentations or impressions made in printing. Time becomes the factor in this case. The sheets or signatures were placed with the back folds resting on the two lower small rods, and the head folds against the small top back rod. These rods formed a right-angle trough or guides for placing the printed signatures, and were adjusted to center, or nearly so, the signatures with the cross-ways in the two heads. In running up the lower head these rods pushed up through the upper head in holes in said head. The rods at the lower end were screwed in holes in the lower head. There were a

number of bundles of signatures lying near the press, which had end boards at top and bottom of them and cords around them and tied.

The work I saw done I know was tied under considerable
35 pressure, as I tested it with the blade of a pocket-knife, and it took considerable force to push the point of the blade between the sheets of the bundle which was tied.

Q. 9. Please tell us the size of the boards used there.

A. Six and a half by ten—about. I didn't measure the board, but I know the boards are about six and a half by ten, and made out of about inch stuff, probably about seven-eighth- of an inch thick.

Q. 10. How did the boards compare in size with the folded sheets?

A. About the size of the work or nearly so. The boards had rounded outer edges, made in the same manner as boards that I furnish.

Q. 11. Please state whether or not the boards were included in the bundle when tied up.

A. They were. I think I have stated that.

Q. 12. How were they arranged in the bundle with reference to the folded sheets?

A. They were placed at the top and bottom of a bundle of sheets one at each end.

Q. 13. In your answer to Q. 8 you speak of the top head being moveable or adjustable by means of a crank, sprocket wheel and drive-chain. Will you please state a little more particularly how the movement of that head was accomplished by the means you have mentioned?

A. I didn't examine that very particularly. I did notice that the three large rods forming the trough had screw-threads cut in them near the top, and probably about half the length between the bottom and top heads. The sprocket wheels, I presume, acted as nuts, they being driven by the drive-chain which was driven by the crank.

Q. 14. What was the condition of the three large rods from the end of the screw-thread to the lower head?

A. Which end of the screw-thread do you refer to?

Q. 15. In your answer to question 13 you say, "that the three large rods forming the trough had screw-threads cut in them near the top, and probably half the length between the bottom and top heads." What I want to know is what was the condition of those rods the rest of their length between the heads?

36 A. They were smooth, turned or cold-rolled.

Q. 16. Was their surface smooth or rough?

(Objected to as leading.)

A. Smooth.

Q. 17. How were the large rods arranged in the press with reference to each other, and with reference to the heads?

A. The two lower large rods were in a line with each other, parallel with the cross-opening across the head, running from back to front, and were on an incline from bottom to top. The large upper

back rod was through the upper back quarters of the heads and was set about an inch and a half back out of line of the lower back rod and acted as guides or slides for the heads and formed a right-angle trough or receptacle for the pressing of large-size work.

Q. 18. Was or was not the arrangement of the large rods such as to permit the placing of sheets in the press without the interposition of the small rods or any of them?

(Question objected to as leading.)

A. Yes, sir. As I stated before, the large rods will serve for lodging large-sized work, such as folio and quarto sizes. It could, however, only be practically used by running the top head down to or nearly where the screw-threads begin. This for large work, such as folio or quarto sizes, would leave ample space for doing that class of work, as the bundles would be necessarily heavy and unwieldly to handle if they were made larger. Again, in quarto and folio work the signatures are not as thick, consequently it would be much harder to keep them regular by reason of the swell in the folds, which in a large bundle the number of sheets would cause the backs of the sheets to slip up out of line of the rods. This would give space for about the same number of signatures as for octavo or smaller sizes, there being usually only about eight pages to a signature of quarto and four to a folio, whilst an octavo would have sixteen.

Q. 19. If you have made any sketch showing the arrangement of the large rods in the Busch press with relation to each other and to either of the heads, will you please produce it?

A. I did and I have it here.

(Witness produces sketch.)

Q. 20. How does this sketch correspond in size with the Busch press?

37 A. It is the exact size of the upper head inside of the large rods, as I took it by folding the paper and making a perfect right angle and laid it on the inside face of one of the heads and took an impression of the head by rubbing with the hand.

Q. 21. Will you please letter the various parts of the sketch and then describe it by reference to the letters?

A. A represents the upper front quarter of the head and foot blocks. B represents the upper back quarter of head and foot blocks. C represents the lower back quarter of the head blocks. D represents the lower front quarter of the head blocks. E represents the cross-ways or openings in the head blocks, where the cord is passed over the boards on the ends of the bundles. G represents the large rods. H represents in the upper head block the holes through which the small adjustible rods pass and corresponding holes in the lower head in which the other end of said rods are screwed. The sketch is full size and measures ten by fourteen and a half, and is large enough to do double the size of the work which I saw being done, which would be a royal quarto printed on twenty-eight by forty-two paper. Even larger work than this could be

done on it, as the pressure exerted over the back and head folds and the printed page would accomplish the work when put through the press and the pressure retained by means of tying. It will be readily seen by this sketch that the two lower rods G form a bed or rest for the back fold of the sheet, and rod G at the top forms a guide for the head fold of the sheet or signature.

(Complainants' counsel offer in evidence the sketch produced by the witness, to be marked "Complainants' Exhibit Jones Sketch.")

Q. 22. When you took the impression by which this sketch was made were the small rods in the machine?

A. I had them removed by the operator.

Q. 23. Please tell us now whether any machines made under your letters patent, No. 204,741, have been introduced into use, and if so, to what extent?

A. I have had a good many of these machines manufactured,—as to the number, I am not prepared now to give it to you. I sold to the United States Government Printing Office fourteen or more. They are in some of our largest printing and binding estab-
38 lishments of the United States, such as Theodore L. De Vinne & Company, printers of the Scribner, now Century Magazine; Harper Brothers, A. S. Barnes, Green's, and a number of others of New York city; Houghton & Mifflin, Riverside press, Cambridge, Mass., and a number of printers and binders in the city of Boston, and some printers and binders at Cincinnati, St. Louis, Chicago, Akron, Ohio, Rochester, N. Y., and other cities of the United States. I can't recall all. I have sold some in England, Canada, Holland and the Dutch government in Batavia. I never kept special books in regard to the sales of these machines, as every transaction would close itself. It was not like running accounts. This was prior to the time when I licensed or contracted with the W. O. Hickok Manufacturing Company, giving them the sole right to manufacture and sell my machines. I have with the sale of each machine accompanied the same with a license to use said machine and the process of dry-pressing as set forth in claim five of said letters patent. I have a blank copy of the form of said license with me and offer this as evidence.

(Witness produces two papers, which are fastened together, and are offered in evidence by complainants' counsel to be marked "Complainants' Exhibit Jones Form of License."

The offering in evidence of the papers just referred to is objected to as being incompetent, irrelevant and immaterial to the issue in controversy.)

Witness continues: I would further state that these licenses are furnished without additional cost of the price of the machine to the purchaser. I merely insert the nominal sum of one dollar consideration.

Q. 24. Where were the machines, to which you refer in your last answer as sold in foreign countries, manufactured?

A. They were manufactured in Harrisburg, by W. O. Hickok.

Some of them were manufactured by the W. O. Hickok Manufacturing Co.

Q. 25. On whose account?

A. On my account. You are speaking of the foreign.

Q. 26. Since your contract with the W. O. Hickok Manufacturing Company, making it your sole licensee to manufacture and sell, have any of your machines been made and sold under said letters patent?

39 A. Yes, sir. The W. O. Hickok Manufacturing Company has manufactured and sold quite a number of these machines; as to how many, I am not prepared to give the number. I know that I have issued quite a number of licenses and at various times have had settlements with them for machines sold. You will notice that I speak of these presses as machines. This is from habit.

Q. 27. Have you or not issued any licenses to use the process of dry-pressing claimed in the fifth claim of your letters patent, No. 204,741, upon any other machine or press than those manufactured and sold under your said letters by yourself or the W. O. Hickok Manufacturing Company?

A. I think I have. I own the patent of Russell A. Hart, of Battle Creek, Michigan, and letters patent No. 394,977, dated December 30, 1888, were assigned to me by the said Russell A. Hart, February 18, 1890. He also transferred to me a number of his machines or presses. I had a case against him for infringement and the assignment of the letters patent and the surrender of the machines he had on hand were a part of the compromise of the case. Some of those machines have since been sold by the W. O. Hickok Manufacturing Company, and for which I issued licenses to use the process. Two of the machines were complete; others were in parts and were completed by the W. O. Hickok Manufacturing Company. I think there were about nine complete and incomplete, that is, in parts not put together.

Q. 28. Apart from these Hart machines, have you issued any licenses for the use of your process upon any other machines than your own?

A. No, sir.

Adjourned to September 22d, 9 o'clock a. m.

SEPT. 22D—9 o'clock a. m.

Met pursuant to adjournment.

Present: Same counsel.

Examination of JOSHUA W. JONES continued.

Cross-examined by Mr. HILL:

X Q. 29. From your first answer I would infer that you have had considerable experience in the art of printing and bookbinding. Is this correct?

40 A. Yes, sir.

X Q. 30. When and where did you serve your apprenticeship?

A. In Harrisburg; with W. O. Hickok, about from 1845 to 1851

X Q. 31. Where were you engaged and in what capacity after the latter date mentioned by you?

A. I was engaged in Richmond, Va., and Harrisburg. Those were the only two places.

X Q. 32. How long were you with W. O. Hickok subsequent to 1851.

A. I was engaged with him in the fall of 1844 as an errand boy, and was with him continuous until after I finished my apprenticeship. I may say that when I first went there the firm consisted of Hickok and Cantine, printers, bookbinders and booksellers.

X Q. 33. Did you serve your apprenticeship as a printer or as a bookbinder, or both?

A. I was bound apprentice to learn the art of bookbinding.

X Q. 34. Where were you engaged during the years from 1851 to 1860?

A. When I left the employment of W. O. Hickok I was engaged with Fenn and Sedgwick, State printers, Harrisburg.

X Q. 35. How long did you remain with them?

A. I can't just say, probably not very long, as I went to Richmond, Va., and was employed by Ritchie and Donavant, State printers of Virginia. On my return home, on a visit, Mr. A. Boyd Hamilton had obtained the contract for public printing of the State of Pennsylvania, and he prevailed upon me to enter into his employment as a foreman, and I have been continuously engaged on the public printing and binding under the various contractors in the capacities of foreman and general manager up to the year 1874. In July, 1874, I was appointed by Governor Hartranft superintendent of public printing. I was reappointed March, 1875. Again reappointed March, 1876. Again reappointed by Governor Hartranft, July, 1876, for the term of four years. I was again appointed in 1881, by Governor Hoyt, for the term of four years. I served up to August, 1883, when I resigned. I have not been in the printing or binding business since that time.

41 X Q. 36. In your first answer you speak of having managed one of the largest printing and binding establishments in central Pennsylvania. To whom did you refer?

A. I have reference to the Singerly printing and binding establishment, in the city of Harrisburg.

X Q. 37. During what years were you with this latter establishment?

A. I first engaged with Singerly and Meyers, State printers, in 1861. After the death of Mr. Meyers, Mr. Benjamin Singerly became the sole proprietor. I continued with him until his death in 1876. Part of that time I was a partner with him in private work, such as printing and binding A. H. English and Company's school books, and also in the publishing of the State Journal, a newspaper published in the city of Harrisburg.

X Q. 38. During the time you served your apprenticeship with W. O. Hickok, what means, if any, was employed for removing indentations or impressions on printed matter?

(Objected to as not proper cross-examination.)

A. The sheets were taken after being printed and dried. The drying was done by laying them over a peel and hung up on poles near the ceiling of the room. They were then taken to a table and laid out flat, averaging from one to six sheets, and were laid between fuller or glazed boards alternately. They were then laid into a large screw-press in bunches about an inch and a half or two inches in thickness and then a cherry board was placed on them and so on alternately until the press was filled, when an old German would call downstairs "Boys, come schrewff die press," when the entire force, consisting probably of eight or ten persons, would go upstairs and put on the pressure by means of a long iron lever, one-half the number on one side the lever pulling, the other half on the opposite side of the lever pushing. The sheets were then allowed to remain in the press over night and the press emptied the next morning in the same manner as it had been filled, that is, the sheets and fuller or glazed boards were piled up on a table and the operators proceeded to take out the flat-pressed sheets, laying them to one side the pile and laying the boards off on another pile. This was all done before the folding of the sheets.

42 X Q. 39. What function did the fuller-boards perform in the operation just described by you?

(Same objection.

In view of the fact that this witness in his direct examination testified as to his having served an apprenticeship, and having a thorough knowledge of the art of printing and bookbinding, it is submitted that the foregoing questions are perfectly proper and legitimate.

Counsel for complainants call attention to the fact that this witness was not asked and did not testify, on his direct examination, concerning the state of the art prior to the date of his patent, and suggests that the matter now inquired about should come at a later stage of the case and be shown by the testimony of witnesses called by the defendant, if it is deemed important as a matter of defence, and is therefore not proper cross-examination.

Counsel for defendant call attention to the fact that this witness, in his direct examination, has referred to his letters patent No. 204,741 in suit, and as said patent purports to contain improvements over the prior state of the art, it is submitted that it is perfectly proper that this witness, being the patentee and inventor, should testify as to what his knowledge of the art was at the time he produced his alleged invention.)

A. The fuller-boards, probably more commonly known in the trade as glazed boards—they being a board about the thickness of a heavy card-board, and are made out of some very hard fibre and being a hard board with a finished surface—they act as a hard substance placed between two rough, soft, yielding substances, and the sheets being placed from one to six between said boards, it gives a comparatively solid surface interposed between the yielding surface

of the sheet, whereby by using pressure and allowing that pressure to remain continuously on the sheets and boards while in press from twelve to twenty-four hours, it smooths out the indentations or impressions made by printing on the sheets.

X Q. 40. In your direct examination and in your letters patent, No. 204,741, you have used the expression "dry press" and also "dry-pressing." Please explain what we are to understand by those expressions.

A. One is the machine on which the initiatory work is
43 done. The other is the fact of removing the indentations made by type; in other words, the impressions made on paper in printing, giving a smooth and even surface to the sheet; in other words, smoothing the sheets.

X Q. 41. In the art of bookbinding is there any such process to your knowledge as "wet-pressing"?

(Objected to as irrelevant, immaterial, and not proper cross-examination.)

A. No.

X Q. 42. In answer seven you speak of the Busch press as being similar to one for which you have patents. How many patents have you on your press?

A. I have a number, but I can't just recall how many.

X Q. 43. Have you patents on said press, other than those set up in this issue, and if so, about how many?

(Objected to as irrelevant, immaterial, and not proper cross-examination.)

A. I have other patents, but, as I said before, I can't say how many, without going and making an examination.

X Q. 44. In answer twenty-three you mention the names of several parties to whom you sold presses, made under your letters patent, No. 204,741. Were all of said presses constructed as shown in Fig. 1 of said patent, and as described in the specifications?

A. Substantially so, with other improvements added. Some were screw and others were hydraulic power.

X Q. 45. Did you furnish "a bulk compresser device" in connection with each machine sold by you?

A. I did not.

X Q. 46. In answer eight you speak of having seen an operator compress and tie several bundles of paper on the Busch patent. Upon what did said papers rest during the process of compressing and tying the bundles on said press?

A. The sheets which I saw being operated upon were about six and a half by ten inches when folded. It was necessary, to center that size with the cross-ways of the press, to rest them on the removable small rods, and so I saw it done.

X Q. 47. Did you see any papers compressed and tied in the Busch press with said papers resting upon the large rods which support the head?

44 A. I did not.

X Q. 48. What are the dimensions of folio and quarto sizes, respectively, when folded?

A. There was a time when the papers were made of regular dimensions or sizes. They were regular sizes, such as 24 x 36, 28 x 42, and so on. This is somewhat changed, as paper is now made of any size the printers or publishers wish to have it. The terms octavo, quarto and folio have to a certain extent been dropped. What I mean is approximately on a basis thus: A sheet 24 x 36 printed on both sides of sixteen-page work makes two signatures. This folded three times makes an octavo size. A quarto, taking the same sheet and printing eight pages on two sides, makes two signatures. This sheet cut in half and folded twice is a quarto. The same size sheet printed on four pages, both sides, makes two signatures. This sheet when cut in half and folded is a folio.

X Q. 49. In a sheet of the dimensions given by you what would be the size of the signatures when folded which you have mentioned?

A. Octavo would be 6 x 9; quarto, 9 x 12; and folio would be 12 x 18.

X Q. 50. In compressing a bundle of printed sheets on the Busch press which you saw, might not the edges of the signatures project out some distance from the small rods and yet produce a perfectly compressed bundle?

A. I do not understand the question.

X Q. 51. To assist you to understand my question, I will call your attention to the model marked "Complainants' Exhibit Model No. 1," and will ask you whether or not bundles of paper might not be compressed on the Busch press, said papers resting on the small rods, their outer edges projecting outward some distance beyond the lower outer small rod?

A. You mean by that the head and foot of the sheet. Yes, such is the practice of pressing all sizes less than the full size of the trough formed by the rods. The object of the small rods is to form a lodging for the back and head of the sheets and to get them even on the back and head, the rods forming a rest and guide. When large work is used which will centre or nearly so without the use of the small rods they can be dispensed with and the large rods can be used for resting the sheets and as guides.

45 X Q. 52. I now call your attention to the sketch made by you and marked "Complainants' Exhibit Jones Sketch"—which you say represents the exact size of one of the heads in the Busch press,—and the number and location of the openings therein for the small rods which support the printed matter, and will ask you whether or not printed signatures might not be compressed on said press and having their outer edge projecting out some distance over the large rod G shown in the right hand of your sketch, the small rods being placed in the openings which I have designated in red ink by X, the papers resting on said small rods.

A. Will you please mark the rod G that you refer to with red ink?

X Q. 53. I will, and I have marked it G².

A. Provided the end board were of the size of the sheet and of sufficient rigidity I think it might be done, but this would bring the tie out of centre and would in time make a very awkward bundle to handle, as to my mind it would retain the pressure lopsided.

X Q. 54. If the signatures were sufficiently large would not the same disadvantage arise if placed upon the large rods G?

A. Yes, but not so much so having the same size sheet.

X Q. 55. I will now call your attention to your letters patent No. 204,741 and will ask you what would be the result if an operator, through forgetfulness or carelessness should leave a bundle in the press over night under pressure and tied. Would the printed signatures be damaged or injured in any way through this carelessness or forgetfulness?

(Objected to as not proper cross-examination.)

A. I think not.

X Q. 56. Is the press shown in your letters patent No. 204,741 capable of bundling and tying papers other than folded printed signatures?

(Objected to as not proper cross-examination, for the reason that the question is directed to matters not asked about or testified to on direct examination and because it is apparently an attempt to introduce matters of defence into complainants' *prima facie* case, and because, if not so intended, the matter sought to be brought out is irrelevant and immaterial.

46 Counsel for defendant would state that the witness in his direct examination has referred to said letters patent and the invention therein set forth purports to be an invention for removing indentations from printed matter, the object of the question was to ascertain from the witness whether it was necessary for the successful operation of his press that the sheets should be folded.

Counsel for complainants call attention to the fact that the witness on the stand was not asked to construe the letters patent in suit, but was called for two purposes, first, to testify to what he saw in defendant's establishment; and, second, to state the extent to which his invention had been put on sale and introduced into public use and that therefore the object of the question being as counsel for defendant has just stated it, the question is incompetent.)

A. It was not so intended. The limits of its capability I am not prepared to say.

JOSHUA W. JONES.

Sworn and subscribed before me, this 22d day of Sept., A. D. 1894.

FRANK E. ZIEGLER,
Special Examiner.

T. J. W. ROBERTSON, a witness on behalf of complainants, being produced, sworn and examined, deposes and says:

Q. 1. State your age, occupation and place of residence.

A. 61. Patent solicitor and mechanical expert, Washington, D. C.

(It is agreed by counsel for complainants and defendant that the witness is competent to testify as an expert witness in patent matters.)

Q. 2. If, in addition to your general qualifications to testify as an expert witness in patent matters, you have any special qualification to testify as an expert witness in cases specially involving the art of printing, will you please state what it is?

A. In my younger days I followed the trade of a journeyman printer, during which time I familiarized myself somewhat with the business of bookbinding, it being often carried on in the same building and frequently in the same room with the type setting
47 and letter-press printing, which last two were my particular branches of the printing business. I have at the present time a small printing office as an adjunct to my office in Washington, where blanks, cards and other matters are printed for my office use.

Q. 3. Have you examined and do you understand United States letters patent No. 204,741, granted to Joshua W. Jones, for "improvement in bookbinders' dry press and sheet tie," and introduced in evidence in this case as "Complainants' Exhibit Jones Patent No. 204,741"?

A. I have carefully examined it and I believe I do.

Q. 4. Will you now turn to said letters patent and state what you understand said improvement to be, as therein described and claimed, limiting yourself as far as possible to that part of the same covered by claims 1, 2, 4 and 5?

A. The invention described in said patent and illustrated in the drawings and covered by the claims referred to in the question is a process for treating folded printed sheets, whereby the impressions made in the letter-press printing process are flattened out, so that the paper will resume its original smoothness, or substantially so, which process is carried out in such a manner that the operator can be continually putting in the signatures or printed matter and removing them in tied-up bundles, whereby with one press a much larger number of signatures can be pressed and at a very much reduced cost for labor over that of the process previously employed. The improvement also consists in a means for carrying out this process, which means is shown in the drawing and more particularly in that part which is shown to the left hand of Fig. 1 and details in Fig. 3 and 4. Previous to the invention of Mr. Jones as described in said patent it was the custom to press printed sheets by inserting them between heavy paper boards, sometimes called "fuller-boards," but generally now called "glazed boards," and putting said boards with the printed papers between them into a powerful press, by which pressure was produced on said boards by various means,

sometimes by means of screw pressure, sometimes by hydraulic pressure. After the pressure was produced on the paper it was continued by allowing the press to remain with its pressure on to its fullest extent for ten or twelve hours or more, say from one night to the next morning, when the pressure was removed, the
48 papers and boards taken from the press and separated by removing the boards from the pile of combined boards and paper, and putting the boards on one side on one pile and making another pile of the printed papers. This was necessarily comparatively a slow process, inasmuch as with one press only as much printed paper as the press would hold when put between the boards could be pressed in about ten or twelve hours, so that where much work had to be done a number of such presses were necessary. It was also costly as to labor, because the sheets had to be placed between the boards and removed therefrom afterwards, which took much time, especially where, as in the case of fine work, only one sheet was placed between two boards; and when this was done comparatively few sheets could be pressed at once because the boards took up much more room than the paper did, they being quite thick.

By the process set forth in the patent the printed sheets are not allowed to remain in the press for any considerable length of time, but only long enough for the operator to tie up the bundle, when they are immediately removed, the entire process of putting the paper into the press, tying it up in the bundle and removing it therefrom taking but a few minutes.

Recess until 2 o'clock p. m.

SEPT. 22D—2 o'clock p. m.

Examination of T. J. W. ROBERTSON resumed by Mr. JACOBS:

Witness continues his answer to Q. 4.

As the entire operation, so far as the use of the press is concerned, only takes but a few minutes, which may be from two to five for each bundle, a large number of bundles may be pressed and tied up in the course of a day, and left tied up between the boards with the pressure upon them as long as is thought necessary to smooth out the impression produced by the printing press, or until the signatures may be wanted by the binder to complete the operation of making the book for which the signatures are printed. The printed paper or signatures are thus allowed to remain for a considerable time tied up in bundles, which time may be from twenty-four hours to three or four days, but may extend to a year or more, the longer the better, as it is upon the time in which the bundles remain tied up subject to pressure between the boards that
49 the smoothness of the printed paper depends, the mere pressure produced by the press in the short time the paper remains in it having comparatively little effect upon the impression produced by the printing press. The pressure of the press and the mere tying up would produce but little effect if the signatures were immediately untied as soon as they were removed from the press,

and the long-continued pressure after the bundle has left the press is therefore an essential part of the process, and without which it would not be much of a success. There is one important difference between the old process and the new that I think has much to do with the success of the process set forth in the Jones patent, No. 204,741. In the old plan where two or more sheets were set between boards the convex side of the impression on one sheet came in contact with the concave side of the sheet above it, so that these sheets would have little or no effect upon each other in smoothing out the impressions produced by the printing press, and especially would this be the case where half a dozen or more sheets were placed between two boards. In the new process described in the Jones patent under consideration, the sheets when folded have the convex impression of one-half of a sheet brought in contact with the convex side of the other half of the sheet by the act of folding the sheet in two, provided the sheet when being folded had its convex side of the impression uppermost. If, on the contrary, the concave side of the impression were uppermost, the concave part of the sheet would be folded together, but on the second fold the convex sides would come together in the center of the fold, so that under any circumstances the convex part of the impression on one sheet would be pressed by or come in contact with the convex impression on the same sheet, or with the convex impression of another sheet coming next to it, and thus the convex impressions coming in contact with each other tend, when under pressure, to efface each other, and, as I believe I said before, the longer the pressure is continued by keeping the bundles tied up, the more the impression is effaced and the smoother the paper becomes, so that I regard it as important that, if the process is to be carried out successfully, the paper should be folded so that the convex impressions should come in contact with other convex impressions, and that the bundles of the signatures when tied up should remain for a considerable period of time in the tied-up condition under the pressure imparted to them by the press.

I have given at some length what I consider the main features of difference between the old and new processes, because in my opinion the process is one that is not easily understood at first, and very few would be likely to understand it unless the essential differences between it and the old process were pointed out.

I will now proceed to refer to the claims of the patent, but before doing so I would premise that there are certain features in the drawing which form no part of the claims under controversy. I refer more particularly to that part of Fig. 1 in the drawing which is to the right hand of said figure, and is called a "bulk compressor," this part not being necessary to the carrying out of the invention, although it would be a convenience to use it. Referring to the first claim of the patent I find it to be as follows:

"1. In a printer's and bookbinder's dry press and sheet-tie, the compressing heads C D D′ and B^2 F′ F, constructed with cross-ways L^2 L^2, centrally arranged through them, substantially as and for the purposes herein set forth."

This claim has a special reference to the parts between which the signatures are held and tied and is intended to cover compressing heads having cross-ways centrally through them, so arranged that the operator can readily tie the bundle of signatures by inserting his arm through to catch and pass the tie through the heads.

The second claim is as follows:

"2. The inclined press bed, H H^2, provided with longitudinal slots, H^1 H^1, in its sides, in combination with the press heads, B^2 F' F and C D D', having through them the cross-ways, L^2 L^2, correspondingly arranged with said slots, substantially as and for the purpose set forth."

This claim in my opinion covers an inclined press bed, provided with openings in its sides, combined with the press heads covered in claim 1, whereby a series of signatures can be placed in the bed without danger of the falling over of said signatures before
51 the press is put into operation, and the signatures conveniently tied up in a bundle after the pressure has been produced upon them and held under such pressure.

The fourth claim is as follows:

"4. In combination with the dry-press bed, H H^2, the device of a set of removal ledges *f*, or a set of adjustable guide-rods, *m*, arranged as and for the purpose set forth."

This claim in my opinion covers the combination of a dry-press bed with devices intended to be used as a support for signatures of smaller size than those which the press is capable of pressing when such devices are not used. These devices are shown in two forms, one of which is shown best in Fig. 4, and are indicated by the letter *f*. These are strips which are set into grooves in the press bed, forming ledges on which the signatures would rest instead of resting on the press bed itself, as they would, if the ledges were not there. The other form of this device is shown best in Fig. 1, where it is indicated by the letter *m*, and consists of rods which pass through holes in the head indicated by the letter V in Fig. 4. These two parts are substantially equivalent to each other and either can be used for the purpose of supporting the signatures with equal facility.

The fifth claim is as follows:

"5. The process herein described for treating folded printed sheets of paper in dry-pressing, the same consisting of subjecting a collection of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles with end boards, then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete dry-pressing."

I have heretofore in the first part of this answer, set forth at considerable length in what this process consists, but I may sum it up by saying that it covers the process of pressing folded sheets or signatures by first subjecting them to pressure, then tying them between boards in a compact bundle and removing them from the press and allowing them to remain tied a sufficient length of time to efface the impressions produced by printing.

Q. 5. Have you examined the model offered in evidence in this case as "Complainants' Exhibit Model No. 1," and do you understand it?

52 A. I have and do.

Q. 6. Have you also examined Complainants' Exhibits "Wood Cut of Seybold Signature Press," "Miller Sketch," and "Jones Sketch," and do you understand them?

A. I have examined them and I believe I understand them all.

Q. 7. Assuming a machine made like the model and having operative mechanism for moving the lower and upper heads, such as is shown in Exhibit "Wood Cut of Seybold Signature Press," and having its three large rods arranged with reference to each other and the two heads as shown in Complainants' Exhibit "Jones Sketch," would you understand the designed operation and use of such a machine?

A. I should and I do.

Q. 8. Will you now compare Complainants' Exhibit "Model No. 1," assuming the operative mechanism and the arrangement of the large rods, as stated in my last question, with the Jones letters patent, No. 204,741, pointing out any resemblances or similarities you may discover and stating whether or not the invention set forth in said patent and covered by claims Nos. 1, 2, and 4, or either of them, is embodied in such machine, giving, if you please, at length your reasons for your opinions upon the subject?

A. I have compared the model with the first claim of said patent and considering it to be as you mentioned, and find such claim to be embodied in said model. Said claim, as I have before stated, covers compressing heads having cross-ways centrally arranged through them, so arranged that the operator can readily tie the bundles of signatures by inserting his arm through them to catch and pass the tie through the head. These heads are shown in the Jones patent as composed of different parts, as clearly shown in Fig. 3, which represents the moveable head. Each of said heads, as shown in the figure referred to, consists of a square base carrying pedestals which are indicated by the letter D, on which are secured sections of the moveable head which are indicated by the letter D'. These parts marked D' form the acting face of the heads, that is, they come in contact with the boards used at each end of the bundle of signatures and press upon the same. These various parts of the head C D' and D form in effect one solid piece

53 with cross-shaped openings in the face and large openings back of the face adapted to receive the arm of the operator. On examining the model I find that the heads there shown are made to represent one piece for each head, but they are to all intents and purposes practically the same as the heads shown in the Jones patent so far as the first claim thereof is concerned. The face of the blocks in the model correspond- to the parts marked D' in Fig. 3, and the back of the blocks correspond- to the part marked C in the same figure, while the small parts between the face and the back correspond to the pedestals marked D in said figure, 36 are, therefore, practically the same as the heads claimed in the first

claim and perform the same function in substantially the same way as the heads set forth in the Jones patent, No. 204,741, and covered by the first claim thereof. Referring to the second claim I find a difference in construction between the inclined bed shown by the Jones patent and the inclined bed shown in the model. The object and function of the bed in the Jones patent is to support the heads and the signatures to be pressed, and to form guides for the same, but the claim is limited to such a construction as will admit of not only those functions being performed, but it must admit of the tying of the bundles when pressed. This is accomplished in the Jones apparatus by slots cut in the sides of the bed, while in the model before me the bed is formed of stiff rods which can be used for the same function as the bed of the Jones press. I do not regard this difference as essential, inasmuch as it is simply a question of how much metal should be employed in the bed. In the Jones bed there is a narrow opening or slot between the parts forming the side of the bed, while in the model there is a large opening. This is merely a question of convenience for the maker. I should imagine that the model or press from which the drawing of the Jones press was made had a wooden bed and it was therefore more convenient to make it with a slot instead of the open space shown in the model, in which the round rods forming the bed of the press, I understand, represent iron. In view of this and what I before stated as to the heads of said model I am clearly of the opinion that the second claim of said patent is embodied in the model under consideration, assuming it to be of the form indicated by the Jones
54 sketch. As to the fourth claim, which covers "the device of a set of removable ledges" or "a set of adjustable guide-rods," I find the latter plainly embodied in the small round rods in said model, and the other element of the claim, the press bed, that is, as I before stated, found in the large rods which support the heads. In view of this I am of the opinion that both elements of the fourth claim of the Jones patent under consideration are substantially found in the model referred to in the question.

Adjourned to Sept. 24th, at 9 o'clock a. m.

SEPT. 24TH, 1894—9 o'clock a. m.

Met pursuant to adjournment.
Present: Same counsel.

Examination of T. J. W. ROBERTSON resumed by Mr. JACOBS:

Q. 9. Were you present here during the taking of the testimony of William Hayes Grier, E. S. B. Miller and Joshua W. Jones, witnesses called by the complainants in this suit, and did you hear them testify?

A. I was and I did.

Q. 10. I now call your attention to the testimony of William Hayes Grier, beginning with answer to Q. 11 and ending with answer to Q. 18, that of E. S. B. Miller, beginning with answer to Q. 22 and ending with answer to Q. 35, and that of Joshua W. Jones, begin-

ning with answer to Q. 8 and ending with answer to Q. 12, and ask you to compare the process therein described with the process described and claimed in the Jones patent, No. 204,741, to point out any similarities and differences between the two which you may discover, and to state whether or not the process described by said witnesses is covered by the fifth claim of said patent, giving your reasons for any opinion you may express at such length as you may deem proper for a clear understanding of the matter.

A. I have carefully considered the testimony which I heard given by the said witnesses and have read their testimony, at least so much thereof as is referred to in the questions you have mentioned, and am clearly of the opinion that the process of dry-pressing described by said witnesses is covered by the fifth claim of the Jones patent referred to in the question. I find that in the process de-
55 scribed by the witnesses and in that set forth in the patent and in the fifth claim thereof, the collection of folded sheets is put into the press with end boards at each end of the collection or bundle and pressure is produced on said sheets by the operation of the press; that while the bundle of signatures or folded sheets is still under pressure it is securely tied into a compact bundle with the end boards still on the bundle, after which it is removed immediately from the press and allowed to remain tied sufficiently long to fix and complete the dry-pressing. The process described by the witnesses and the process set forth in the patent are therefore in my opinion identical. The fact that the presses employed are of different construction makes no difference so far as the process itself is concerned, for the process is not limited to the use of any particular kind of press, but even if it were, the two presses are very similar in mechanical construction, if the equivalency of the parts are considered. In each case there is a trough or bed provided with openings in its sides and set in an inclined position, having heads with cross-ways in them to enable the operator to readily tie the bundle when pressed, and end boards are employed which are interposed between the bundles of signatures and the press heads, and a screw is employed to produce the pressure, so that mechanically considered there is not much difference between the presses employed in both processes; that is to say, the process of pressing the signatures as described by the witnesses referred to in your question and that set forth in the patent in the fifth claim thereof.

In my previous testimony in this case I referred to the end boards, but do not think I have dwelt sufficiently upon their importance to the success of the process, as such end boards are very important. If there were no end boards the pressing would be very imperfect, inasmuch as the bundle would become round at the ends after it was removed from the press and thus there would not be so much pressure at such rounded parts. Moreover the cross-openings in the heads would produce corresponding marks on the end sheets. It is therefore important that such end boards should be employed in the process of dry-pressing and that they should be tolerably smooth and of an even surface on their acting faces.

Q. 11. What function, if any, is performed by the end boards in the process of dry-pressing?

56 A. They serve in the first instance to transfer the pressure of the press to the signatures, and afterwards serve to prevent the cords with which the bundle is tied from injuring the end sheets of the bundle; but their main function is to retain the signatures under the pressure imparted to them by the press, whereby the impression produced by the printing press is effaced. They also serve to some extent as a protection to the end sheets in carrying the bundles from place to place and whilst the bundles are stored away.

Q. 12. Has the fact of the end boards being of substantially the same size as that of the folded signatures anything to do with the performance of their function?

A. It has, for if they were not of substantially as large a size as the folded signatures the marks of their edges would be left on the sheets at the end of the press, and the projecting edges of the sheets would be damaged by the cords.

Q. 13. What I am trying to get at is whether or not the end boards have anything to do with the distribution of the pressure over the sheets in the bundle, and if so, whether that is a matter of any importance in the matter of dry-pressing?

A. The end boards do have to do with the distribution of the pressure over the sheets in the bundle, and I find it stated so in the specification of the patent, where it is stated, referring to the end boards, "They are used on the ends of the bundle of the paper under treatment to distribute the pressure over the whole area of the ends of the bundle, and also to prevent cutting or marring of the paper by the twine or other tying material. Said end boards are made of any suitable material affording strength and rigidity at little cost, and of suitable size to nearly match the size of the folded work." I fully agree with this statement of the functions, as I consider they do distribute the pressure over the whole area of the ends of the bundle, which is an important feature in the process of dry-pressing, and is necessary in doing perfect work.

Q. 14. In your answer to Q. 4, near the end of the third paragraph thereof, you say that you "regard it as important that, if the process is to be carried out successfully the paper should be so folded that the convex impression would come in contact with other convex impressions." Will you please state what is the fact in the

57 usual operation of printing and folding with respect to bringing the faces of the paper against each other?

(Question objected to as involving a process in the art of folding printed matter which is not involved in the process in issue.)

A. In my answer referred to in the question, I dwelt considerably on this point, because I considered it important to point out the differences between the old and new processes. In the usual operation of printing sheets and folding the same with which I am well acquainted, the convex impression always comes in contact with other convex impressions, either wholly or in part, in each sheet, and when the folded signatures are set in a bundle in the press in

the manner described in the patent the convex impressions act upon each other. It may happen, however, that if the convex side of the impression is underneath that on the first fold the concave sides will come together, but with the second fold the convex sides will again come together between the second fold.

Cross-examination by Mr. HILL:

X Q. 15. To what extent did you familiarize yourself with the business of bookbinding?

A. I merely observed the processes carried on during the time that I was engaged in the printing business. I never actively engaged in bookbinding, except to occasionally repair the binding of books of my own, or books that I had bought in bad condition.

X Q. 16. During what years were you engaged in the printing business and what class of work was done by you while engaged in that business?

A. I first began my practice in the art of printing in London, England, about 1850, after which I came to New York, worked for a time in a book office there, after that I went to Staten island, where I practiced all parts of the printing business and did a little of everything in that line. It was a small country printing office, where the running of a country newspaper was combined with job printing, book-selling and the running of a country post-office, in all of which I took my share of the work, but especially the printing part, where I filled the offices, as occasion required, of printer's devil, roller boy, pressman, reporter, editor, folder and carrier of the papers after they were printed. After working there a year
58 and a half or two years I again went to New York, where I worked in various offices, among others, in the Tribune building, at the office of Baker and Godwin, which was then one of the finest offices of that day, where all kinds of work was done connected with the printing business; after that I was foreman of the New York Ledger, and in 1853 I went down to Washington, where I worked on the Congressional Globe, the precursor of the Congressional Record of today; shortly after that I returned to New York, where I worked on a magazine called the People's Journal, also on the New York Herald and the Scientific American; and about this time I became interested in sewing machines and dropped the printing business for a time, but occasionally did a little work. The last time I worked as a journeyman printer was in 1862.

X Q. 17. It was during the period, then, from 1850 to 1862, that you had occasion to observe the processes carried on in the art of bookbinding, was it?

A. It was.

X Q. 18. During that time it was customary, was it not, to remove indentations from printed matter?

A. It was.

X Q. 19. Please state the various means employed during that time for this purpose, as observed by you.

A. The only processes that I ever observed were substantially that described by the witness Jones, namely, the insertion of the

printed sheets, generally one at a time, between boards, such as described by him, setting a bundle of such combined paper and boards into a press, producing pressure on such bundle by means of a screw or hydraulic power, and allowing the pressure to remain on the paper in the press for a lengthy period of ten or twelve hours or so and then removing the bundle from the press and separating the paper from the boards. That was the only process I remember to have witnessed, but I knew from information of others that papers were sometimes pressed to remove indentations previously produced by printing by subjecting said papers to a process called hot-pressing, but with the details of such process I was not acquainted.

X Q. 20. Did you ever observe more than one sheet having been placed between the boards in the process just described by you?

59 A. It was usually the practice to set in one sheet at a time, especially where fine work was done, but occasionally more than one was set in, where there was a great hurry and the work was not of the finest quality.

X Q. 21. What became of the sheets subsequent to being pressed and prior to being bound into book form, during this period from 1850 to 1862?

A. They were usually folded ready for the binder, carried to the binders' tables, where they were sewed and bound, if they were for book work.

X Q. 22. Did you ever observe any of said folded sheets tied together in the form of a bundle after having been pressed?

A. I have seen them tied, but not very often.

X Q. 23. Did you ever see any one tying them into bundle form?

A. I can't call to mind now any instance of seeing the bundles being tied up, but I may have done so.

X Q. 24. In the bundles of folded printed sheets, which you say you have seen tied, were the ends of said bundles protected by means of stiff card-board, or other kind of board, to protect the paper from the action of the string used in tying the bundles?

A. My impression is at this time that there were, on each side edge, pieces of thin pasteboard bent over the sides at the corners of the two opposite side edges, at about the center of said side edges, where the tying cords passed around the bundle, which was done only at that place, that is, crosswise of the folded sheet and not lengthwise, the object being simply to keep the bundle of sheets together, or for convenience for transporting them from one part of the building to another, and not with the intention of producing any pressure upon them to efface the impressions, as such impressions had already been removed by the action of the hydraulic or screw press before referred to in the previous answer.

X Q. 25. Are you positive you never saw such bundles tied and provided with card-board extending entirely over the two ends of the bundles?

A. I should not like to say at this distance of time that I never have, but I have no recollection of it.

60 X Q. 26. Did you ever have occasion to observe any such bundles of folded printed matter from 1862 to 1874?

A. No, sir.

X Q. 27. So far as you know, was the process described in your former answer 19 successful for the purpose of removing indentations from printed matter?

A. It was.

X Q. 28. From your previous description of the invention set forth in the Jones patent, No. 204,741, I infer that in your opinion the primary feature of the invention therein set forth consists of the process as claimed for the bundling and tying of printed sheets, for the purpose of removing the indentations therefrom. Is this correct?

A. I consider the process set forth in the fifth claim as the primary feature of the invention disclosed in said patent.

X Q. 29. You will please explain more fully what we are to understand you to mean by the expression "concave" and "convex" side of a printed sheet, which terms you have frequently used in your direct testimony?

A. I used the words "concave" and "convex" in connection with the impression and not with the sheet itself, at least that was my intention, although I may have used it in the latter connection. By "concave" I meant the hollow or sunken impressions produced by the pressure of the type, when the sheet was going through the printing operation, and by "convex" I meant the raised surface produced by the same operation; one side of the sheet, to wit, that with which the type came in contact the last time it went through the press, having the hollow or sunken impressions, or "concave," as I have called them, while the opposite side had the raised impressions.

X Q. 30. In case a sheet of paper be printed on both sides, what would be the result as to these concave and convex portions?

A. Taking a sheet of paper and passing it through a printing press an impression is produced which on the second impression printed on the opposite side is partly effaced by said second impression, but this second impression remains until it has been effaced by some process, such as we have been considering, leaving concave and convex impressions the same as if the sheet had only been printed once.

61 X Q. 31. In case the second impression should not come on a line directly opposite that of the first impression, would there not be convex portions on each side of the sheet?

A. There would; but in the days when I was engaged in the printing business, and I believe it is the same now, it was always an object to make the line on one side of the page come exactly on a line with the line on the other side of the page; or, in other words, what the printers call "register." This was for two reasons, one was that one impression partly effaced the other, and the other reason was that the paper between the lines looked whiter, thus producing a better effect than it would if the lines on one page came between the lines on the next page.

X Q. 32. Is it a fact that by having the lines on opposite sides of the page "register" that the second impression will wholly remove the depressions made by the first impression?

A. Not entirely.

Recess until 2 p. m.

SEPTEMBER 24TH—2 o'clock p. m.

Cross-examination of T. J. W. ROBERTSON resumed by Mr. HILL:

X Q. 33. If you can recollect, please give us the name of the place and the date, as nearly as you can recollect, of the incident alluded to by you in your answer to X Q. 22?

A. I cannot just now. There were three or four places where it might have occurred; one was at a place in Pearl street, New York; I think it was near Wall street. The name has entirely escaped my memory. I only worked there a short time, shortly after my arrival in New York, and it might have been at Baker and Godwin's. It might also have been at an old printing office which I have not mentioned heretofore in my deposition, which was on Nassau street near Beekman, near where the first Herald office stood, which I believe printed some kind of magazine which was sent away in bundles. At this length of time my memory somewhat fails me as to what I saw in those days, although the fact remains in my memory of having seen such bundles. The date must have been somewhere between 1851 and 1854.

X Q. 35. I now call attention to "Complainants' Exhibit B 15*," pages 458 and 459, and will ask you whether or not you find
62 on both of said pages what you have termed "convex impressions"?

A. I do.

X Q. 36. From the manner in which this signature is folded, please state whether or not the convex impressions on one side register with the convex impressions on the opposite page when folded together, that is, do the convex impressions formed by one line of type on one page register with the convex impressions formed by the lines of type on the opposite page, as the sheet is now folded?

A. Before answering your question, I would like to ask if you mean by "opposite pages" the pages numbered 458 and 459?

X Q. 37. I do.

A. They do not. The register and folding is not perfect; but I think you are under the wrong impression as to my use of the word "register." I use that word, as generally understood in the printing business, as meaning the so arranging of printed matter that the lines on one side of the page will be exactly in line with the lines on the page immediately back of it.

X Q. 38. Please examine said pages 458 and 459 of this Exhibit "Printed Sheet B 15*," and state whether or not the convex impressions on the one page came into contact with the convex impressions on the opposite page, when the sheet is folded, as in this exhibit?

A. In some cases they do and in some cases they do not. The sheet under consideration is what is known in the trade as "rule-and-figure work," and is about the worst style of work that could be

got up to illustrate the point of "register." If the printed matter thereon was ordinary reading matter, the effect would be very different and the registration would probably be much better.

X Q. 39. The figures on each of said pages are arranged in line across the page, are they not?

A. They are.

X Q. 40. What function did the boards perform in the device which you described in your answer to X Q. 19?

A. They were for two purposes, to prevent the set-off of the printed matter on one sheet upon the sheet next to it, and also to
63 help efface the impressions produced by the printing. Ordinarily the sheets are laid one upon the other, as they come from the printing press, with their concave impressions lying over or upon the convex impressions, one to a certain extent fitting in the other, instead of convex impressions lying against the convex, as in the process claimed in the Jones patent. The interposition of the boards broke up this arrangement and the sheets were thus more readily made smooth by the power of the press.

X Q. 41. Is any mention made in the Jones patent with regard to the "convex impression laying against the convex"?

A. There is not.

X Q. 42. Did not the boards described by you in answer to X Q. 19 assist to evenly distribute the pressure over the whole surface of the bundle of printed matter?

A. I suppose they had some effect that way, but they were too thin to be of much service in producing an even impression over the entire surface. I am referring now to the glazed boards set between the sheets of the bundle. If a bundle composed of printed sheets and such boards were simply tied up, even after being put in the press, they would produce little or no effect in distributing the pressure over the entire sheet.

X Q. 43. In this process described by you in answer to X Q. 19, were there any other boards used excepting the glazed boards?

A. There were usually other boards used at the top and bottom of the bundle and sometimes others at intervals.

X Q. 44. Were these boards used at the top and bottom of the bundle comparatively stiff and rigid ones?

A. They were.

X Q. 45. What function did they perform?

A. They were used to transfer the power of the press to the sheets being pressed, and if the sheets were larger than the bed or head of the press they would serve to distribute the power of the press evenly over the surface of the sheets. My remembrance is rather vague on this point as to the size of the head of the press; that is, whether it was small enough to require the stiff boards to transmit its power evenly, or not. My impression is, however, that the heads of the presses I have seen were usually large enough to distribute
64 their pressure themselves, that is to say, they were as large or larger than the sheets which were pressed under them.

X Q. 46. In either event the pressure would be upon the boards

and that pressure would be transmitted through the medium of the boards upon the printed matter, would it not?

A. That is correct.

X Q. 47. In your answer to Q. 11, in speaking of the end boards used in the process described by Mr. Jones in his patent, you say with reference to the functions of said boards, "but their main function is to retain the signatures under the pressure imparted to them by the press, whereby the impression produced by the printing press is effaced." Are we to understand from this that said boards are the medium by which the pressure is retained?

A. It is the means by which the pressure is retained in an even condition. If the boards were not there, but with the bundle simply tied without the boards, the pressure would not be maintained evenly. Of course, some means must be used to hold the boards and bundle into the compressed condition.

X Q. 48. In your opinion in compressing and tying a bundle of printed papers, say twenty inches high, with end boards, would it not increase the rigidity of said bundle when tied if a third board be inserted therein midway between the two end boards, and of the same size as the latter?

A. I cannot see what good it would do in this respect. It might serve as some kind of protection to the center of the bundle in case a blow was given it about where the board would be, but I cannot see that it would add much to the rigidity of the bundle when tied.

X Q. 49. In your opinion would the insertion of such a third board destroy the efficacy of the process set forth in the Jones patent?

A. I do not think it would.

X Q. 50. Suppose a third or fourth board should be inserted and properly distributed throughout the bundle, would that fact, in your opinion, destroy the efficacy of the process claimed in the Jones patent?

A. I think not. It would, however, be unnecessary work to put the boards in the bundles, the bundles would take up more room in the storing away and would be heavier to move around. It would take more cord to tie the bundles up and require more boards than the present plan, and would therefore be objectionable.

X Q. 51. In your opinion, would the efficacy of the Jones process be destroyed if one or more glazed or fuller boards should be inserted within the bundle between the two end boards.

A. I do not think the success of the process would be destroyed by the insertion of one or more fuller-boards, but the process would not be so successful as with the fuller-boards left out, for the reason that the boards would take time to be put in place, and if many of them were employed, a less number of signatures would have to go in the press, so that each bundle would contain a less number of signatures, and the final result would be that less work would be done by the operator than would be the case were such boards left out of the bundle.

X Q. 52. With reference to claim five, as contained in the Jones patent, No. 204,741, in your opinion, are all the steps therein recited

essential and necessary for the purpose of successfully carrying out the invention of Mr. Jones?

A. To carry it out to the greatest advantage all the steps described in said claim should be taken.

X Q. 53. According to the wording of said claim, when must the bundles be removed from the press, after having been tied?

A. Immediately after tying.

X Q. 54. In your opinion, according to the wording of the claim, what length of time should intervene between the tying of the bundle and removing it from the press?

A. I think the time might be varied without avoiding the claim. The word "immediately" in the claim I think is intended to distinguish the process referred to in the claim from the process of dry-pressing where the printed sheets necessarily stay for a long period, say ten or twelve hours, in the press before removal therefrom.

X Q. 55. What construction do you place upon that step in the fifth claim which reads as follows: "The same consisting of subjecting a collection of such sheets to pressure without the use of fuller-boards"?

66 A. I think that the latter part of said sentence, "without the use of fuller-boards," is entirely superfluous, and might as well have been left out, but, as the sentence stands, it means that one of the steps of the process consisted in putting folded sheets into the press in contact with each other instead of setting the sheets in unfolded condition between fuller-boards, as in the old process.

X Q. 56. In your opinion, is claim one of letters patent No. 204,741 to be broadly construed to cover a press having two compression heads, with cross-ways through them, for the purpose of tying the bundles?

A. If the Jones patent is the first to show such cross-ways, he would be entitled to have his first claim construed broadly as you stated it.

X Q. 57. In comparing the model marked "Complainants' Exhibit Model No. 1" with the second claim of the Jones patent, you have assumed that the large screw-rods in the Busch press upon which the heads are mounted are used for the purpose of supporting the printed signatures while being subjected to pressure, have you not?

A. I have assumed them capable of such use, or of being used for that purpose.

X Q. 58. If said rods were never designed for such purpose, and were never used for such purpose, would your comparison thereof, with reference to the second claim of the Jones patent, as set forth in answer to Q. 8, be a proper construction?

A. I think so, for the fact would still remain that such rods were in the press and could be used at any time for the purposes of supporting signatures, should the owner of the press desire to do so.

X Q. 59. Would a press constructed as shown in Complainants' Exhibit "Wood Cut of Seybold Signature Press," in your opinion, be practical for the purpose of compressing a large bundle of signatures, the same resting upon the outer large screw-rods shown in said cut?

A. This cut is somewhat misleading, owing to the perspective. It would appear from it that the two farther screw-rods had but a very short smooth surface, and that the screw-threads ran nearly
67 to the lower end of one of them, while I understand that, as a matter of fact, the screw-threads do not extend more than half way between the two heads when said heads are at their greatest distance apart, thus leaving about half the length of the rods between the heads quite smooth. With such a length of smooth rods as I believe to be the fact and practice, such a press would be very useful for pressing quarto sheets, as bundles of quarto sheets sufficiently large to be conveniently handled could be pressed on such a press with the upper head run down and permanently fixed at the end of the smooth part of the rod.

X Q. 60. Would the fact of said large rods being kept properly lubricated detract any from their usefulness for the purpose just stated in your last answer?

A. Lubrication would be objectionable in such case, if such lubrication consisted of oil or grease freely applied, but means can be found for producing sufficient lubrication on such rods that would not be objectionable.

X Q. 61. Claim two of letters patent No. 204,741 is specifically and restrictively worded, is it not, and each of the parts referred to by reference letters?

A. The claim is somewhat limited in its form and it has, as you say, reference letters in it, but an inventor who is the pioneer in an art is not limited to the exact construction shown, even if he employs reference letters to indicate the parts.

X Q. 62. The press shown and described in patent No. 204,741 is capable of compressing and having tied therein matter other than that of folded printed signatures, is it not?

A. It is.

X Q. 63. It would be capable of compressing between its heads and having tied therein in bundle form various articles, other than that of folded printed signatures, would it not?

A. It could.

X Q. 64. The removable ledges *f*, specified in claim four, are set in the sides of the trough, are they not?

A. They are.

X Q. 65. The set of adjustable guide-rods *m*, also specified in claim four, are mounted in the heads of the press, are they not?

A. They are.

68 X Q. 66. Are the ledges *f* and guide-rods *m* specified in claim four, capable of simultaneous and conjoint use for the purposes specified?

A. No, they are not.

X Q. 67. If the sheets of paper rest upon the removable ledges *f*, the rods *m* could not be used, could they, at the same time?

A. No, sir.

X Q. 68. If the papers rested upon the adjustable guide-rods *m*, the removable ledges *f* would perform no function, would they?

A. They would not ordinarily, but it is possible that if the clips

shown in Fig. 4 and marked G were removed, that said ledges *f* would serve as guides for the movable head.

X Q. 69. Referring to the "model No. 1" and to the wood cut of Seybold signature press, please designate the portion therein shown which is the equivalent, in your opinion, of the longitudinal slots H^1, in the sides of the press bed as specified in claim two of the Jones patent?

A. I consider the space between the two back rods as the equivalent for the slot in the back of the press, and the space between the front rod and the back lower rod as the equivalent of the slot shown in the near side of the bed in the drawing of the Jones patent, in Fig. 1 thereof.

X Q. 70. Could you construct a press and mount the heads as shown in this model without producing the intervening spaces between the rods?

A. I could not.

X Q. 71. Could you construct a press on the order shown in the Jones patent, Fig. 1, having a trough with heads mounted therein, without at the same time forming therein the slots in the sides of the trough?

A. Of course, if I made a press like the Jones press, as shown in his patent, I must make slots therein, if it was intended to use the press for the same purpose as the Jones press is used and to conveniently tie the bundles therein.

X Q. 72. Would said slots be formed as the result of mounting the heads in the trough as shown, or would said slots have to be specially formed in the sides of the trough?

A. No, to the first part of your question, and yes, to the last.

69 X Q. 73. In your constructions of claims one, two, four and five of the Jones patent, you have considered said claims in the light of Mr. Jones being a pioneer, have you not, both in the construction of the press and in the process therein set forth?

A. I have.

Redirect examination by Mr. JACOBS:

Q. 74. Please state a little more fully what you mean by your answer to X Q. 73.

A. I consider him the pioneer because he made a distinct advancement in the process of dry-pressing and a distinct advancement in the art of making presses for that purpose. I consider it a new departure in the art of press-making for pressing paper and also in the process for pressing printed signatures.

Q. 75. Is it necessary that he should be what is technically known as a pioneer in order to support your construction of the first, second and fourth claims of his patent?

A. Not necessarily so. Unless equivalent constructions of earlier date can be found he is entitled to a broad construction of his claims, whether a pioneer or not.

Q. 76. Would the fact that he was not such pioneer disturb the conclusions expressed by you in your answer to Q. 8?

A. It would not.

Q. 77. Is it necessary that he should be such pioneer in order to support your construction of the fifth claim of his patent?

A. No.

Q. 78. Would the fact that he was not such pioneer disturb the conclusion expressed by you in your answer to Q. 10?

A. It would not.

Q. 79. Has anything been developed in your cross-examination which would lead to change your construction of his several claims, as expressed by you in your answer to Q. 4?

A. There has not.

Q. 80. Or the conclusions expressed by you in your answers to questions 8 and 10?

A. No, sir.

Q. 81. Referring to your answer to X Q. 70, please explain why you could not "construct a press and mount the heads as shown in" "Complainants' Exhibit Model No. 1" "without producing the intervening space between the rods"?

70 A. If I made a press and mounted the heads as in the model referred to, there must necessarily be intervening spaces between the rods, as otherwise the heads could not be mounted as shown in the model.

Q. 82. Referring to your answer to X questions 59 and 60, assuming that it was desired to dry-press a considerable amount of sheets of the size mentioned by you in your answer to Q. 59, at a given time, would any considerable amount of lubrication of the large rods be necessary?

A. No, sir.

Q. 83. Would any lubrication which would interfere with the use of the rods as a bed to receive the signatures be necessary, even assuming that oil or grease were used?

A. It would not. Sufficient lubrication might be obtained by anointing the surfaces of the rods and wiping them off.

Recross-examination by Mr. HILL:

X Q. 84. What do you consider to be the mechanical equivalent of the elements specified in the claim of a letters patent?

A. A combination of devices which perform the same function in substantially the same way.

X Q. 85. If said combination of elements be capable of performing the same function as the elements specified in a claim, is such a combination, in your opinion, the mechanical equivalent of the elements specified in the claim?

A. If the elements referred to were known equivalents at the time of the invention referred to, and had been used in the same combination and capable of operating substantially the same way, such a combination would, in my opinion, be the mechanical equivalent of the combination covered by the claim.

X Q. 86. I have reference solely to the elements being capable of performing the same functions, whether or not they had formerly been used in a combination similar to or performing functions analogous to those set up in the claim of a patent?

(Objected to, for the reason that the question calls for a matter purely of law, which is for the court and not the subject of expert testimony.

Counsel for the defendant deems the question a proper one, inasmuch as the witness has assumed that certain elements shown
71 in the "model No. 1" were the equivalent of certain elements specified in claim two of the Jones patent, basing his assumption upon the mere fact that the large rods were capable of being used as a trough for the printed matter.)

A. I believe as a rule it is understood that to meet a combination claim, a combination of elements must be found which were known as equivalents for the elements of the claim under consideration.

X Q. 87. What do you mean by known equivalents?

A. I mean devices that are commonly known as capable of performing the function of those for which they are substituted.

X Q. 88. Then, in your opinion, an element or combination of elements, which are capable of performing the same function of an element or elements specified in a claim, are the mechanical equivalents thereof?

A. If they were known equivalents and performed the same functions in substantially the same way.

X Q. 89. Would the large rods in the "Exhibit Wood Cut Seybold Signature Press" be practical for compressing bundles of signatures resting upon the screw-threaded portion of said rods?

A. I should say not, unless the threads were filled in with some substance to make a smooth surface, which might readily be done.

X Q. 90. That would hardly be practical, would it?

A. I see no reason why it should not be, provided the upper head was kept in a fixed position.

X Q. 91. Is the outer head shown in the cut designed to be kept in a fixed position?

A. I believe it is intended to be kept so while the press is in operation.

X Q. 92. And how otherwise?

A. I believe it is intended to be movable for the purposes of adjustment simply.

X Q. 93. That is a function performed through the medium of the screw-threads cut on said rods in conjunction with the driving sprockets, is it not?

A. I believe so.

T. J. W. ROBERTSON.

72 Sworn and subscribed before me this 24th day of Sept., A. D. 1894.

FRANK E. ZIEGLER,
Special Examiner.

Plaintiffs' Evidence in Rebuttal.

NEW YORK, *July* 22*nd*, 1895.

Testimony taken and proceedings had in the above-stated case, at the office of Messrs. Theo. L. De Vinne & Co., 12 Lafayette place, New York city, by stipulation of counsel and in pursuance of notice, before Samuel R. Bell, notary public and special examiner.

Appearances.

M. W. Jacobs, for complainants.
George J. Murray, for defendant.

THEO. L. DE VINNE, a witness on behalf of complainants, being produced, sworn, and examined, deposes and says:

Examined by Mr. JACOBS:

Q. 1. State your age, residence, and occupation.

A. My age is 66; my residence is in New York city; I am a printer.

Q. 2. How long and to what extent have you been engaged in the art of printing?

A. As far as my recollection serves, I began in 1843. I began as an apprentice on the "Newburgh Gazette," New York, learning composition and press-work. Afterwards I was proof-reader, foreman, and junior partner in the firm of Francis Hart & Co. Since the death of Mr. Hart in 1877, I have had the entire manage-
73 ment of the business. I may add that previous to this I worked in various book and news offices in this city. As a foreman and employer I have had considerable experience, both in job and book work. The business that I now conduct prints the "Century Magazine," the "Century Dictionary" and all the publications of the Century Company. I also do much work for other publishers. Our pay-roll for some years back averages about four hundred names per week.

Q. 3. Prior to October, 1877, what was the state of the art with respect to dry-pressing, or removing the type indentations from printed sheets?

(Question is objected to unless limited to the establishments that the witness was employed in, or had charge of. Question withdrawn.)

Q. 3. Were you acquainted with the general state of the art with respect to dry-pressing, or the removal of type indentations from printed sheets as it existed at and prior to October 24th, 1877?

A. I was acquainted then with the processes used. It was a part of my business to know all useful processes for dry-pressing.

Q. 4. Will you please tell us what the state of the art was in respect to this matter, giving such details as you consider necessary for a proper understanding of the subject?

A. It was the usual method in all printing offices that did book and pamphlet work, and in many cases where there was fine job work, to wet down the paper and print it in a damp state, and afterwards to press the sheets between what are known as "press-boards." This was done in a small office by means of a screw-press; in larger offices by means of a hydraulic press.

Q. 5. What were the press-boards to which you refer?

A. I hardly know how to define the constituents of the press-boards. They vary in different offices and different manufactories, but it is a thin, very hard, highly calendered and very compact mixture of textile rubbish, of which oakum is a very large constituent.

Q. 6. Were they ordinarily or sometimes known as "fuller-boards"?

A. I never heard them called by that name here. They are generally defined here as press-boards. When the work was very fine and exact, one printed sheet was laid between these press-
74 boards. When it was not so exact, two or three sheets were put between the boards after being thoroughly dried.

Q. 7. How were the sheets dried for this purpose?

A. By hanging on poles at the top of the ceiling.

Q. 8. How long were the sheets allowed to remain in the press when this process was used?

A. The usual method was to keep them in over night; to fill the press in the afternoon, screw it down or pump it up, and keep them under pressure until the next morning.

Q. 9. Did it require much or little labor to charge the press in this process?

A. It took much labor. To fill the press would always take a man and a boy, sometimes a man and two boys a day.

Q. 10. How about taking the sheets out of the press; was much labor required there or not?

A. Allow me to correct the previous answer. I should have said to fill and unfill a press.

Q. 11. How many sheets per day could be dry-pressed by this process, with a hydraulic press of the size ordinarily used in large printing establishments?

A. I cannot answer that question with definiteness because the capacity of hydraulic presses differ widely; some of them have but two or three feet above the platen, others have much more. It depends upon the height of the ceiling. The press has got to be made to fit that.

Q. 12. About how much space in a hydraulic press would it require to press 5,000 sheets of the "Century Magazine"?

A. I would hardly undertake to say how much space it ought to take. I should say that 1,750 sheets were about as much as could be put in a press at one time.

Q. 13. By whom was the dry-pressing done by this process? By the printer or by the bookbinder?

A. It was always done by the printer. The publisher of books made it a part of the business of the printer to deliver sheets pressed to the binder.

Q. 14. Were they delivered to the binder flat or folded?

A. Always flat.

Q. 15. Are you acquainted with the process of dry-pressing printed sheets as set forth in the fifth claim of United States letters patent No. 204,741, June 11th, 1878, to J. W. Jones, a copy of which I now hand you?

75 A. I am acquainted with the process.

Q. 16. Have you used it in your work?

A. I have; our house has two of these machines. One of them has been in use since 1879; the other since 1885 or 1886.

Q. 17. To what extent have you used these machines and this process of dry-pressing in your establishment?

A. We use them for the pressing of the "Century Magazine," the "Century Dictionary," and other books of the Century Company. We use them for all long editions of any work requiring dry-pressing.

Q. 18. Have the Jones press and process been in continuous use in your establishment since 1879?

A. They have.

Q. 19. Please state the results of the use of the Jones press and process as compared with the old method of dry-pressing described in your preceding answers?

A. It does better work and at less cost. It saves waste of paper, and allows pressed signatures to be stored and handled with greater facility.

Q. 20. In what respect does it do better work?

A. The pressing is more uniform. In the old process of pressing by a screw or hydraulic press, it often happened that indentations in some corner were not thoroughly removed.

Q. 21. Are they thoroughly removed by the Jones press and process?

A. They are. The pressure is uniform throughout.

Q. 22. Do you or not consider the Jones process an advance upon the processes in use prior to October 24th, 1877?

A. I do so consider it.

Q. 23. In what respect and to what extent? Please state as fully as you think proper.

A. It enables me to dry-press work which before was never dry-pressed at all. When the "Century Magazine" had the comparatively small circulation of 60,000 copies a month, we wanted to dry-press it by hydraulic presses, at that time the best machines in use. We made calculation as to the number of presses that would be required and the amount of space that the presses would occupy, and the cost of doing the work, and we gave up the project as being entirely impracticable. We got the Jones dry-presser at a

76 latter date because it seemed to us the only machine that could do the work quickly, and with reasonable economy. We have also applied Jones' dry-presser to many other books. The workmanship done by it has always been satisfactory to binder and publisher. This machine has enabled us to do a great deal of work, and do it well within little time.

Q. 24. In what, as you understand it, do the chief features of the Jones process consist?

A. First—the novelty of pressing sheets in bulk after folding, without any press-board between to protect against set-off. I disbelieved in the possibility of the process until I was convinced by its practical working. Second—in the novel methods used for retaining pressure on these printed signatures after they left the press. These strike me as the most important features. There are other smaller matters, but I do not know that they are pertinent. I may add one, and that is his apparatus for keeping folded signatures in a gutter or channel, and directly in the line of resistance so that they will not spring or wobble under pressure.

Q. 25. Was it possible by the methods in use prior to October 24th, 1877, to dry-press sheets in bulk after folding?

A. It was not possible. I have tried it many times to my sorrow and spoiled the work.

Q. 26. Was it possible by the methods in use prior to that time to dispense with press-boards between the sheets in the process of dry-pressing?

(This line of examination is objected to unless limited to machines and devices within the knowledge of the witness.)

A. I never knew it to be done with success.

Q. 27. Had you or not prior to the date stated made any through examination of the art so far as it related to dry-pressing?

A. I did make repeated examination of the processes in the houses of Harper & Brothers, Gray & Green, and other book printers of this city.

Q. 28. Were you or were you not acquainted with the literature of the subject at that time?

A. I tried to be. I was a subscriber to and receiver of many of the leading typographical journals in this country and abroad.

77 As one of the officials of the Typothetæ I took much interest in everything that related to the development of the printing art.

Q. 29. Have you yourself published any books or other publications on the subject of printing?

A. I have. I have written and published the "Printers' Price-list," first edition 1869—a book intended for the use of job printers; another on the "Invention of Printing," 1876, and another, "Historic Printing Types," 1886, the substance of a paper read before the Grolier Club, of this city. I have published no other books, but I have frequently written on printing for trade journals in this country and in England, and have contributed some papers on books and engravings and printing methods for the Century Magazine.

Q. 30. What are the novel methods of retaining pressure upon the printed sheets after they have left the press in the Jones process as referred to in your answer of question 24?

A. To me the novelty consists in tying up the pressed signatures between hardwood boards in such a manner that the pressure is not relaxed.

Q. 31. Referring to your answer to question 24, do you look upon the inclined trough of the Jones press as an essential feature of his apparatus?

A. I do. In that position it keeps the signatures straight and up to the guides and side before pressure is applied. When pressure is applied a gentle pressure on the part of the workman can keep the signatures to be pressed in a line. If the sheets or signatures were placed upright without any defense or protection on either side, they would spring and wobble, and I do not see how it could be possible to keep them straight or in the line of resistance.

Q. 32. In using the press are the sheets reversed or are the backs laid all one way?

A. We keep them one way.

Q. 33. Is there any advantage in this?

A. Yes; it presses or flattens out the fold of the paper better.

Q. 34. Are the adjustable guide-rods in the press of any importance?

(This line of examination is objected to, and a motion will be made to suppress the testimony as not being proper at this stage of
78 the case, it being testimony-in-chief and not in rebuttal of any evidence offered by defendants.)

A. They are of importance.

Q. 35. If you have at hand any cuts fairly representing the operation of dry-pressing of the sheets according to the old process described by you, will you please produce them?

A. The illustration on page 126 of the "Harper's establishment," dated 1855, is a fair representation of the old method of dry-pressing sheets. I have a distinct recollection of seeing this process in that place as shown in the cut about the year 1858.

Q. 36. And is that substantially the same method which continued in use down to and including the year 1877?

A. I know it to be, and believe it to be, the same process.

(The cut referred to by the witness offered in evidence to be marked "Complainants' Exhibit Hydraulic Presses.")

Q. 37. Will you look at the cut I now hand you and state whether or not it represents the Jones signature press, which you now have in operation in your establishment, or one of them?

A. It is a fair representation of the general construction of the press we now use. I cannot undertake to be minute or specific about every particular.

(Cut offered in evidence and marked "Complainants' Exhibit Cut of Jones Signature Press Used in the 'De Vinne Press.'")

Q. 38. Will you please look at Fig. 5 of the cut which I now hand you and state whether or not it fairly represents the bundle of printed signatures after being passed through the Jones press in your establishment?

A. It is a fair representation of it.

(Cut offered in evidence to be marked "Complainants' Exhibit Cut of Jones' Bundle of Printed Signatures.")

Q. 39. If you can furnish us with a small piece of press-board, such as you say was used in the old process of dry-pressing, will you please do so?

(Piece of press-board produced by the witness to be marked Complainants' Exhibit "Sample of Press-board.")

Defendant's counsel, not waiving the objections above noted, but relying upon the same, proceeds to cross-examination:

X Q. 40. For what purpose do you now use the press-board, a sample of which you produce?

79 A. For the pressing of small sheets, chiefly of job work, that have to be delivered flat.

X Q. 41. Do you use them on the Jones press?

A. I do not. They are used on the hydraulic press.

X Q. 42. In pressing signatures by the old process were not wood boards used at top and bottom?

A. Always.

X Q. 43. After the signatures have been in the press over night, as you say, and taken out in the morning, were they tied in bundles?

A. No. Not to my knowledge. We never tied them in this house, and I do not know or believe that they were tied in any other house.

X Q. 44. You never heard or knew of the signature press that employed platens with cross-groves for twine, and in which signatures were pressed and tied, before the pressure was removed, prior to the press which you say you put in your house in 1878 or 1879; is this correct?

A. I never knew that such a process was used in any office or on any machine before the Jones dry-presser.

THEO. L. DE VINNE.

CITY, COUNTY, AND STATE OF NEW YORK, *ss:*

I, Samuel R. Bell, a notary public, in and for the State of New York, do hereby certify that the above-named witness, Theodore L. De Vinne, was produced before me at the time and place above stated, was duly sworn according to law before testifying, that his deposition has been read over by him before signing, and that he has signed the same this day in my presence.

Witness my hand and official seal this 22d day of July, in the year 1895.

[SEAL.]

SAMUEL R. BELL,
Notary Public, Kings Co.

(Cert. filed in N. Y. county.)

80 PHILADELPHIA, PA., *July 23d*, 1895.

Testimony taken and proceedings had in the above-stated case, at the Hotel Hanover, 12th and Arch streets, Philadelphia, Pa., by stipulation of counsel and in pursuance of notice, before Theo. H. McCalla, notary public, as special examiner.

Appearances.

M. W. Jacobs, Esq., for complainants.
George J. Murray, Esq., for defendant.

JAMES B. NICHOLSON, a witness called on behalf of the complainants, being produced, sworn, and examined, deposes and says:

Examined by Mr. JACOBS:

Q. 1. State your age, occupation, and place of residence.

A. Age, 75; residence, Philadelphia; occupation, grand secretary of grand lodge of Odd Fellows.

Q. 2. What was your occupation prior to your present one?

A. Bookbinder.

Q. 3. Harrison B. Hood, a witness called by defendant to testify as an expert, during the course of his deposition referred to and introduced into the record a number of extracts from a book "published in 1856 by Henry C. Baird, entitled, 'Manual of the Art of Bookbinding,' by James B. Nicholson." Are you the James B. Nicholson who wrote that book?

A. I am.

Q. 4. Mr. Hood quoted, from the book referred to, a passage from page 41, under the title "Beating, Pressing, etc.," beginning with the words, "The first operation," etc. Will you please state whether the process of beating referred to, had any connection whatever with removal of type indentations from printed sheets?

A. None whatever.

Q. 5. Were you at the time you wrote that book or at any subsequent time, aware that the process of beating with a hammer had ever been used for the purpose of removing such type indentations?

A. I was not.

81 Q. 6. In your judgment, would that be a practicable method of removing such indentations?

A. I do not think it would; I never had any practical test of that, as the sheets always came from the printer already pressed.

Q. 7. Was it at the time your book was written, or at any subsequent time while you remained engaged in *the* bookbinding, the work of the bookbinder to remove the type indentations from the printed sheets?

A. It was not.

Q. 8. By whom was it done?

A. It was done—or attempted to be done—by the printer.

Q. 9. Mr. Hood further quotes from page 43 of your book, beginning with the words, "A rolling machine has been invented as a

substitute for the beating which books require previous to being bound," and again, from page 44, beginning with the words, "a powerful embossing press, technically called a 'smasher,' has lately been employed to great advantage," and again, from page 45, beginning with the words, "In some binderies a hydraulic press is relied upon for compressing the sheets without their undergoing the beating or rolling process." Were any of the processes described in these passages for the removal of type indentations?

(Objected to by defendant's counsel as the passages speak for themselves and it is immaterial what this witness's opinion — regarding the process intended, so long as the means described is sufficient to accomplish the result.)

A. They were not.

Q. 10. Please state for what purpose these several processes as well as the beating described in the previous passage were used in the art of bookbinding?

(Question objected to as immaterial.)

A. Until the requisite degree of solidity was obtained. They were designed to make the book solid by driving out all the air that was in or between the sheets.

Q. 11. Were the processes of beating and rolling, etc., applied to all kinds of work that came into the bindery?

A. I don't think that they were; simply for fine, good books. Publishers' work was merely pressed in a standing or hydraulic press. Cheap or low-priced books could not bear the expense.

82 Q. 12. Did the book while passing through the bindery undergo more than one pressing?

(Objected to as leading.)

A. It did; the sheets were pressed or run through the rolling machine or smasher before it was sewed. It was then pressed after being laced in by the forwarder; it was pressed again slightly when finished.

Q. 13. In any of these operations was the book or were the sheets while under pressure tied in such manner as to retain the pressure thereon?

A. They were not.

Q. 14. Mr. Hood in his answer to cross-questions 15 and 16 of his deposition says that gathering and collating are the same process; is that correct?

A. It is not; they are entirely different and distinct processes. In gathering the sheets, the sheets are laid out upon a gathering board or table; a pile of the sheets of each signature being placed side by side the whole length of the board or table. A girl passes along and draws one sheet from the top of each pile; they are then placed upon another table, and the gathering process is completed. Then the sheetman or a girl takes the gathered book by the top right-hand corner and with her left hand she goes over each sheet and sees that it is in its proper place. That is collating. The pro-

cess of collating is described on pages 39 and 40 of the manual. Sometimes in the gathering, two sheets are picked up by the gatherer; this is corrected in the collation. Sometimes the gatherer omits to draw a sheet from its place, and the collator detects and rectifies the mistake.

Q. 15. In what form were the sheets delivered by the printer to the binder at the time your manual was written, and subsequently, so far as you know? Were they flat or folded?

A. They were flat.

Q. 16. What was the first operation performed by the binder after the sheets were delivered to him?

A. To fold the sheets.

Cross-examined by Mr. MURRAY:

X Q. 17. In your opinion how much pressure would be required to remove type indentations from a pile of signatures?

(Objected to as new matter and not proper cross-examination.)

A. I do not know; I have had no experience in printing.

83 X Q. 18. But you have had experience in bookbinding, have you not?

A. I have.

X Q. 19. By what process, if you know, was it that type indentations were removed from the manual you have been testifying about?

A. I suppose it was done by the printer; by pressing the sheets between fuller-boards.

X Q. 20. If it had not been done by the printer as you describe, but the signatures had been put together and sewed as you have described them and then subjected to pressure of 50 to 80 tons, do you think that pressure would have removed the type indentations?

A. A book could not have been submitted to that pressure after it had been sewed.

X Q. 21. Assume that it had been subjected to that pressure before it had been sewed, and answer the question under that assumption?

A. I do not know whether it would remove the type indentations; it might partially, perhaps; we never pressed a book for that purpose.

X Q. 22. After you had folded the sheets into signatures what was the next operation?

A. Gathering them.

X Q. 23. And after they were gathered and collated, what next?

A. They were beaten, rolled or smashed; if they were good books.

X Q. 24. And if not good books, what then?

A. If not a good, if they were cheap, low-priced, or publishers' books, they were simply pressed in the standing press.

X Q. 25. When good books were made how long did you subject the signatures to pressure; I mean a bundle of signatures sufficient to form a book?

A. When the book was subjected to a smasher they were not then submitted to a press; books that were rolled were put in a press to take the curl out of the books, so the sheets would lie together. Books that were beaten would not require as much pressure, if they were evenly beaten. The tendency was to beat them too
84 thin around the edges except by an expert beater. Publishers' work was generally pressed over night, the press changed in the morning and remained during the day.

JAMES B. NICHOLSON.

Sworn and subscribed before me this 23d day of July, A. D. 1895.

THEO. H. McCALLA,
Notary Public.

STATE OF PENNSYLVANIA, }
City and County of Philadelphia, } ss:

I, Theo. Hill McCalla, a notary public in the aforesaid State, city, and county, do hereby certify that the above deposition of the above-named witness, James B. Nicholson, was taken at the time and place above named, the witness having been first sworn by me before testifying; that his deposition was read to him before signing, and that he signed the same in my presence.

Witness my hand and official seal this twenty-third day of July, A. D. 1895.

[SEAL.] THEO. H. McCALLA,
Notary Public.

WASHINGTON, D. C., *July* 24, 1895.

Testimony taken and proceedings had in the above-stated case, at the office of T. J. W. Robertson, No. 605 Seventh street, Washington, D. C., by stipulation of counsel and in pursuance of notice, before G. Dittmar, notary public, as special examiner.

Appearances.

M. W. Jacobs, Esq., for complainants.
George J. Murray, Esq., for defendant.

THOMAS B. PENICKS, a witness on behalf of complainants, being produced, sworn, and examined, deposes and says:

85 Examined by Mr. JACOBS:

Q. 1. State your age, occupation, and place of residence.

A. Age, 54; place of residence, Washington, D. C.; occupation, bookbinder, Government Printing Office.

Q. 2. Were you formerly employed in the Government Printing Office in any other official capacity; if so, state in what capacity and for what length of time?

A. Yes; superintendent of the folding-room of the Government Printing Office 25 years; from 1866 to 1887, and from 1889 to 1894.

Q. 3. What was the nature of the work under your supervision as superintendent of the folding-room?

A. All the work was printed in the press-room, then forwarded to the drying-rooms for dry-pressing, then came to the folding-room, where the work was cut, folded, tied up in bundles of five hundred each; these bundles were tied up with a simple piece of paper top and bottom or a piece of pasteboard, then a rope was passed around the bundle, a man then put his left arm on the top of the bundle and drawed the cord around the bundle as tight as possible, then knotted the rope; these bundles were then removed to the warehouses and remained until the work of the different signatures were all completed and ready for gathering into books; the work was then removed from the warehouse to the gathering tables, and placed on the gathering table for gathering; the work was then tied up again by hand in the same manner as the bundle of signatures were and then stored subject to the orders of the bindery. Everything that was made into book form passed through the folding-room in my superintendency, except blank work which had to be done.

Q. 4. What method of dry-pressing was used there when you took charge of the folding-room?

A. The ponderous old style,—pressing sheets between fuller-boards.

Q. 5. If any other method of dry-pressing was subsequently introduced, please state what it was in your own way, how it came to be introduced and all about it.

A. In the year 1878 the Hon. John Defrees was public printer. He sent for me and Mr. Oliver Reed, who was then foreman
86 of the press-room, and said to us: "There is a man by the name of J. W. Jones, who has invented a machine for removing the indentations of type from sheets after they are folded. He has this machine running at the State printing office, at Harrisburg, Pennsylvania. I want you to act as a committee and go to Harrisburg, see this machine in operation and investigate the work." We felt very skeptical about the claims of Mr. Jones for removing the indentations of type in signatures after they were folded, so we thought we would take some of the work that was printed in the Government Printing Office. We were not willing to go there and see work that was printed by them and pressed. We took five hundred octavo sheets and five hundred quarto sheets. These signatures were given a heavy dose of ink for this especial purpose, and at the time I thought we were putting up a job on the Jones press, and that it would be impossible for them to remove the indentations of type from these thousand signatures, and there would be no set-off of ink. So we went to Harrisburg, carried the thousand sheets to the State printing office, examined the working of the Jones signature press, saw our thousand sheets pressed. We then sealed the bundles for fear that some one might tamper with them in our absence. These sheets were pressed at noon. The next morning we went to the State printing office and found the seals of the bundles unbroken. We opened the bundles, examined the sheets carefully, and to our astonishment the indentations of type were removed, and

there was no set-off of color, and the sheets were perfectly smooth. We then returned to Washington with the thousand sheets, showed them to the public printer, and made a favorable report upon the work done by the Jones signature press. We recommended to him that he purchase one machine on trial.

Q. 6. Were any of these machines purchased and put to work in the Government Printing Office?

A. They were at different times by John Defrees, public printer, and A. M. Clapp, public printer, and S. P. Rounds, public printer, there being at times fourteen hydraulic machines that had been purchased under the administration of the public printers just named.

Q. 7. What results were obtained by the use of these machines as compared with the "ponderous old style, pressing sheets
87 between fuller-boards?" Please state in your own way and as fully as you think necessary.

A. There was a great improvement in the appearance of the work, the indentations were removed uniformly, and there was a glossy surface produced by the signature press that was not obtainable from the old style of hydraulic pressing. The work pressed by these machines was advantageous, there being no waste of signatures that necessarily came from handling by the old process, and the large saving by the process made the saving to the Government the cost of the work comparatively nothing.

Q. 8. Did you or not consider the Jones press and process an advance in the art?

A. Most undoubtedly. It is one of the best pieces of machinery that was ever introduced into the printing and bookbinding trades.

Q. 9. In what, as you understand it, did the novelty of the Jones process consist?

A. The novel part of it to me was the fact that you could remove the indentations of type after the signatures had been *been* folded, something that was never heard of before in my experience in the trade; also the uniform manner in which the signatures were pressed, removing all the swell in the head, back, and front of the sheets which necessarily occurs in folding; and the solidity of the bundles for books, making the signatures and bundles after being pressed as hard almost as a rock.

Q. 10. In what respects were the Jones press and process an advance in the art?

A. Well, for perfection of removal of indentations of type, and for rapidity in the quantity of work produced by them, and for the great advantages of security to the work after being pressed for storing purposes, for the saving of storage and on account of the protection against fire. The signatures of the work tied up and stored until completion of the work under the old system of tying up necessarily made a large loss of the signatures from the fact of the paper being wet when tied by hand and stored away, the paper would dry, the bundles become loose from contraction, the piles of signa-
88 tures careened and leaned over to such an extent that it became necessary to often take the piles of signatures down and

retie them and repile them; also the cord used in tying up the bundles by hand would crease and kink the sheets to such an extent that many of the signatures top and bottom of the bundles were destroyed, often necessitating reprinting of signatures at considerable cost for the completion of the work.

Q. 11. How many sheets per day could be dry-pressed by the Jones process upon a single machine?

A. Well, of course that depends a great deal upon the adeptness of the hydraulic pressman who manipulates the machine. Some men can do more than others. I have known some men in racing on the machine to do one hundred and fifty bundles, each bundle containing five hundred signatures, in eight hours, making seventy-five thousand signatures in eight hours. No man should be allowed to operate one of the hydraulic pressing machines who does less than fifty thousand signatures in eight hours.

Recess.

Q. 12. In what do you consider that the differences consist between the old process referred to by you and the Jones process of dry-pressing?

A. In the old process the sheets were laid between fuller-boards for removing the indentations of type; this naturally from printing of the sheet would make them all concave, and this pressure was lost after sheets were removed from the old hydraulic presses. Whereas from the Jones pressing machines the sheets being folded, the printed matter would make convex against convex and concave against concave, and then having solid blocks at the end of each bundle distributes the pressure uniform over the signatures, and when the work is pressed to the capacity on the machine it is desired, the tying of the bundles retains the pressure of the machine on the signatures printed, and the longer the pressure thus retained on the bundles leaving the machine the more advantageous is the work.

Q. 13. In the old process were the sheets laid concave against concave or concave against convex?

A. They were all laid one way, being concave against convex.

Q. 14. Will you look at U. S. letters patent No. 181,389,
89 to J. B. Archer, and state whether the operation of dry-pressing could be conducted by the end frame shown in Fig. 2?

(Question objected to for the reason that it does not appear so far that the witness is qualified to testify as an expert in relation to patents for mechanical devices of any kind.)

A. I don't think it possible to remove the indentations of type by the frames here described, for the reason the pressure on signatures printed could only cover that portion where the frame was, leaving in the center of the sheets without any pressure that is required to remove the indentations of type. Whereas in the block used on the Jones machine for pressing it covers the entire surface of the paper.

Q. 15. In the Jones machine did the inclined trough perform any special function? If so, please state what it was.

(Objection repeated.)

A. Yes, the incline of the trough allowed the trough to be filled with signatures with the backs all one way, and the heads all one way, which otherwise could not be done by one person in an upright machine, as it would be almost impossible to pile up sheets a foot high with backs and heads all one way.

Q. 16. Was there any advantage in having the sheets with the heads all one way?

A. Yes, if the heads and backs were not laid all one way in pressing, the sheets would undoubtedly slip and the heads or backs of the sheets would be twisted and kinked, and by the sheets all lying one way it brings all the printed matter exactly over printed matter and thereby the indentations of type are more easily removed.

Q. 17. From your experience can you say whether or not a quick or sudden blow by a hammer would remove the impressions of type on paper?

A. No, it would not. The sudden blow would break or destroy the fiber of the paper, whereas if the pressure is gradual and even you can get the desired result. A quick, sudden blow would not give the desired result.

Q. 18. Do bookbinders hammer books after they have been printed; and, if so, for what purpose?

A. Yes, it's a common thing for bookbinders to hammer books after the work has been printed and made into books. This
90 hammering is done to remove the swell in the backs of books from sewing and to make them as solid as possible for cutting.

Q. 19. Was this hammering done in your experience for the purpose of removing type indentations?

A. No, the hammering is not done to remove the indentations of type, and what was often hammered all over the book, sometimes in addition to the hammering just stated, was for the purpose of removing creases or kinks in the paper produced by tying up the sheets before they were made into books.

Q. 20. In your experience, prior to the Jones press and process, was any method used for removing type indentations except the ponderous method of pressing sheets between fuller-boards in a hydraulic press to which you have referred?

A. No, I never heard of any machine prior to the Jones signature press that would remove the indentations of type except the old process of laying the sheets between fuller-boards and pressing them.

Q. 21. Where did you work prior to entering the employment of the Government?

A. Worked in the city of Philadelphia, Pa.

Q. 22. Can you give us any idea of the saving to the Government by reason of the introduction of the Jones presses and process?

(Question objected to as it does not appear what process was used before the introduction of the so-called Jones press, nor does it appear that the process used prior to the introduction of such presses

or the machines used for accomplishing the same purposes used by the Government were the best machines upon the market prior to 1878.)

A. Well, the capacity for dry-pressing on the old-style hydraulic pressing machines was about fifteen hundred fuller-boards containing four sheets between each fuller-board, which makes six thousand sheets, and these sheets being cut in half would make twelve thousand copies. That number of sheets with the fuller-boards and wooden boards which were put in to steady the sheets and fuller-boards was a pressful. These presses were allowed to press these sheets about four hours, that being two presses for eight hours, the working time of the employees of the Government Printing
91 Office. That would make twenty-four thousand copies pressed in the eight hours by the old hydraulic system. There was employed six men to each press, including their work of trucking, racking, placing the signatures between the fuller-boards, piling them up in the presses and again removing them after being pressed. The pay of these men was two dollars ($2) per day. That would make twelve dollars ($12) per day for the twenty-four thousand sheets pressed by the old system. Whereas, on the Jones signature press for the removal of indentations of type, fifty thousand sheets is an ordinary day's work of eight hours. The man who operates the Jones hydraulic press in the Government Printing Office receives $2.40 (two dollars and forty cents) per day for the pressing of the fifty thousand sheets, thereby doing more than double of the amount of work done by one of the old hydraulic pressing machines, and a difference in wages of twelve dollars ($12) for six men and two dollars and forty cents ($2.40) for the pressman on the Jones hydraulic machine, that being a saving of nine dollars and sixty cents ($9.60) in money alone on one machine. Then there are other advantages in the saving of signatures that from the new process over the old, in the handling of the sheets from the old hydraulic presses, from the tying up by hand, from the waste in storage,—would be another large item in saving to the Government.

Q. 23. Referring to your answer to question 19, were there any creases or kinks in the paper produced in the Jones process which required to be hammered out?

A. No; it is impossible for there to be any creases or kinks in the work pressed on the Jones machine, from the fact of the immense pressure and the uniformity of the pressure, and there being no ropes that touches the bottom, top, or ends of the sheets, thereby preventing the kinks or creases that were caused in the old way of tying up signatures.

Q. 24. How were the signatures tied in the Jones machine or process?

A. In the inclined, rectangular trough you placed a pressing board in the lower end of the trough against the lower platen connected to the piston. The signatures were then placed against the block,—heads against the outer side of the trough, and the backs
92 against the lower side of the trough,—until the trough contained five hundred signatures; then another end-pressing

block was placed at the upper end of the bundle of signatures near the upper stationary platen in the trough; then the pressure was applied and the work in the trough was gradually pressed up to the upper platen of the trough until the amount of pressure required was obtained, these platens, top and bottom, being split crosswise, and the large opening admitting of the arm. The rope was then passed through these openings around the bundle of the work with the pressure on, and securely tied. After the bundles are securely tied, the pressure is removed from the signatures in the trough. The work can then be removed from the pressing machine for storage purposes with the pressure still retained.

Q. 25. Did the open crossways admitting the hand and forearm perform any function in this operation?

A. Yes, necessarily. It would be almost impossible to tie the rope around the bundles all the way unless these openings were in these cross-heads, as they admit, especially the large opening in the platen, of passing the arm through the large opening in the platen, then through the opening in the head crosswise section to the opening in the lower bed of the press, then around the large opening in the lower crosswise section, to the opening in the back, then around again to where it is tied.

Q. 26. I now hand you several letters having reference to the use of the Jones press and process in the Government Printing Office, and ask you whether they are signed by you, and whether they correctly state the facts as they existed at the time the letters were written.

A. They do, and they are correctly signed by me.

(Letters offered in evidence to be marked "Complainants' Exhibit Thomas B. Penicks' Letters of February 25th, 1879, and February 5th, 1880, and August 3d, 1886.")

Q. 27. Referring to your letter of February 5th, 1880, what do you mean by "I now press all books after being gathered"?

A. In answer to that question I would state that it is impossible for the Government bindery to receive the work as fast as completed by the printing office, and it became necessary to store this
93 work away in the warehouses until the bindery was ready to receive it. These books often remained in the warehouses for weeks and months, subject to the order of the bindery. It became necessary for the preservation of the work to again tie them up into the bundles of books to preserve them, otherwise if the bindery could have taken this work as fast as it was gathered it would not have been necessary to repress the books for binding.

Q. 28. Then it was only for the purpose of retaining the sheets in bundles and not for the purpose of dry-pressing that they were pressed after gathering? Is that correct?

A. That is correct. The indentations had already been removed with the first pressing of the sheets.

(The introduction of the letters is objected to and the whole of the

foregoing deposition, except question and answer 14, for the reason that it is testimony-in-chief and not properly testimony in rebuttal.)

Cross-examination by GEORGE J. MURRAY, Esq.:

X Q. 29. In your answer to question 14, you say that the Archer patent would not remove type indentations for the reason that the pressure would only cover that portion where the frame was. Assuming that the frame was substituted for boards, what would be your opinion?

A. Well, as far as this drawing is concerned, it shows the drawing of a bale of manure or other substances, and I do not think that you can bale sheets to remove the indentations of the type like the drawing of the bale described in the patent and specification of J. B. Archer.

X Q. 30. I asked you to assume that the frame of the J. B. Archer patent was substituted by a solid board at each end. To be more explicit, assume that the bars marked "A" in the drawing of the Archer patent were replaced by a solid board extending across the bale, and that signatures were subjected to pressure between two of such end pieces and tied in the manner while under pressure, as described in the Archer patent. Would such process remove the type indentations? And if not, why not?

(Question objected to as not proper cross-examination and for the reason that it assumes matters which do not appear in the patent in question.)

94 A. From the appearance of the drawing, being a large bale, it would seem to me there would be a promiscuous piling of sheets in the bale described by J. B. Archer's patent; it would not admit of the removal of the indentations of type from the assumed question asked, and as the patent therein described simply shows a frame partially around the bale, and then tied by an unknown pressure to me, I therefore think it impracticable to remove the indentations of type.

X Q. 31. What removes the indentation- of type in the Jones press?

A. The gradual pressure on the sheets and convexing and concaving of type coming together, and the immense retained pressure removes the indentations of type.

X Q. 32. What removes the indentations of type under the old ponderous process you have spoken about on the intermediate sheets between the fuller-boards?

A. The convexing and concaving of the indentations of the immediate sheets between the fuller-boards, and the fuller-boards forming an even, hard substance with the pressure of the hydraulic machines forces the fiber of the paper which has been disturbed by the indentations of type again back to its place.

X Q. 33. What prevented the offsetting in the intermediate sheets in the old ponderous process?

A. The theory of that is that after the work is printed, there is some chemical atmospheric change, or, as it would be, an invisible

film over the paper, and as long as this film or invisible covering is unbroken there will be no set-off of the intermediate sheets.

X Q. 34. Then the same chemical agency which prevented offsetting of the intermediate sheets in the old ponderous process, also prevents the offsetting in what you understand to be the Jones process; is that correct?

A. I believe so.

X Q. 35. In the Archer process the bands which are secured around the frames retain whatever pressure the bale may have been subjected to in press after the press platens have been separated, do they not?

A. It may, where the bands are on the bale.

X Q. 36. Why do you say "may"? Don't you know that they will, if the frames are strong enough to resist strain after the pressure is removed?

95 A. I do not.

X Q. 37. Have you any opinion as to whether they will or not, if the frames are rigid enough to prevent springing after the bands have been tightened and the pressure of the platen removed?

A. My opinion is,—from observation in baled goods,—that there is always a bulge in space left open for the want of uniformity of pressure.

X Q. 38. Well, a bundle of signatures tied up by the Jones process is baled goods, is it not?

A. It is baled but not in the sense of the bale shown in the Archer patent.

X Q. 39. The difference is that in the Archer patent frames are employed, while in the Jones so-called process end boards are employed. If there is any other difference, please state what it is.

A. Well, as I said before, the bale shown here is not a bale of signatures, but apparently a square bale with a large quantity of substances promiscuously thrown into baling machines. The Jones machine, having the solid blocks top and bottom to the bundles, and the signatures all laid exact over each other, the heads, backs and tails of the sheets folded, with a gradual pressure of the machine, would, in my estimation, be entirely different from the bale shown and supposed by me to press in the ordinary baling machine.

X Q. 40. I don't think you have answered the question. Perhaps I have not made myself understood. Assume that the Archer bale is compressed in an ordinary hydraulic or screw-press, in each of which the pressure is necessarily gradual, and under this assumption answer the question.

A. Well, being an assumed proposition, I again assert that I have answered the question intelligently.

X Q. 41. You don't think, then, that material such as described or suggested in the Archer patent could be compressed and the pressure held in the Jones press?

A. No, I don't think that the Jones machines would bale manure or any substances like manure.

X Q. 42. Why?

A. Because in the proposed baling machine, as is used by Mr.

Archer, substances thrown in the square box with the sub-
96 stance thrown in the same machine is protected by the box in the baling machine, and the matter therein compressed together, and the matter being of a soft nature, as manure and similar substances will adhere together and make a square bale; whereas, in the Jones machine—if you should put manure into the Jones machines—just as soon as the pressure was put on the machines, from the fact of there not being a square box to hold the receptacle, and no boards at the tail of the machine, where the tail sheets come, the matter pressed, as manure and soft substance-, by the Archer machine, would squash out from the Jones machine from the want of the tail protection.

X Q. 43. Do you think it would require any more pressure to remove type indentations than it would to remove kinks in the paper which you say was removed by hammering?

A. Yes, or I could never in hammering a book remove the kinks or creases made in it, nor get the power of thirty-five tons pressure from my arms.

X Q. 44. Do you think if the sheets after printing were dried and then folded into signatures, and a pile of these signatures subjected to the old ponderous press you have spoken about, that the type indentations would be removed?

A. I do not.

X Q. 45. Why?

A. It would be impossible, from the fact that the old hydraulic pressing machines were about six or seven feet high from platen to platen, and you could not pile folded sheets in one of these old hydraulic pressing machines with the heads all one way and backs all one way. You could not press them—they would not remain on account of the press being perpendicular. As soon as the pressure would be put on, the sheets would all squash out, and the desired object of removing the indentations of type could not be accomplished.

X Q. 46. If the signatures were put in press alternately head and tail instead of being all placed one way, how then?

A. You would not get the desired result then.

X Q. 47. Why not?

A. Because the turning of the head towards the tail of the sheet and the back towards the front of the folded sheet would throw the printed matter entirely out of the convex or concave.

97 X Q. 48. What difference would that make?

A. It would make the difference of either a flat surface coming against a convex, or a concave coming against a flat surface.

X Q. 49. Well, what of that? Didn't the concave and convex surfaces come against flat surfaces when fuller-boards were used?

A. Not entirely.

X Q. 50. Do you mean to say that when fuller-boards were used, that the type indentations were not as completely removed from the outer as they were from the intermediate sheets?

A. I do.

X Q. 51. It was well known then that the intermediate sheets in the old process had the type indentations more perfectly removed from them than they were removed from the outer sheets which came in contact with the fuller-boards?

A. The inner sheets always had a better appearance, were smooth and better in every respect as printed matter, from the fact that the glazed fuller-boards on the lower and top sheets seemed to mash the indentations of type out.

THOMAS B. PENICKS.

Adjourned until July 25th, at 10 a. m.

JULY 25, 1895.

Proceedings resumed pursuant to adjournment.

Present: Same counsel as yesterday.

T. J. W. ROBERTSON, a witness who was formerly sworn and testified, being recalled on behalf of the complainants, deposes and says:

Q. 1. Have you read and do you understand the letters patent offered in evidence in this case by the defendant?

A. I have and I do.

Q. 2. Have you read the testimony of Harrison B. Hood, called by the defendant to testify as an expert witness in this case, and do you agree with him in the conclusions stated in his deposition?

98 A. I have read the testimony referred to, and while I agree with him in one or two points, I disagree with most of his conclusions.

Q. 3. Please state what conclusions you disagree with, giving your reasons fully therefor.

A. I find on referring to his testimony that he cites quotations from two printed works describing the art of bookbinding, one of which is "A Manual of the Art of Bookbinding" by James B. Nicholson, while the other is a book entitled "The English Cyclopædia, Arts and Sciences." The extracts given by Mr. Hood from these books refer to an entirely different process from that of dry-pressing, and which is performed after the paper has already been dry-pressed, and is most generally performed by a different set of operators than is the operation of dry-pressing; the latter being a part of the printer's duties, while the pressing described in the books cited by Mr. Hood is a part of the bookbinder's duties, and has nothing to do with the object for which dry-pressing is performed, namely, the removing of indentations made by the type in the act of printing, nor would it be practicable to remove indentations in that manner. To remove indentations, such as are produced in the type-printing process, it is necessary that the process shall be a long and continuous one, as otherwise the indentations will not be permanently removed. All that the processes, described in the books referred to, accomplished was simply the solidifying of the book, mostly by pressing out the air that was between the pages when being folded.

I find nothing whatever in these processes that in anywise describes or suggests the process set forth in the fifth claim of the Jones patent in suit. Referring to the patents in the order in which Mr. Hood has mentioned them, I find that No. 181,389 issued to J. B. Archer, was for a patent for "baling manure and other substances." In said patent there is shown a bale held under compression by means of cross-ties, and an open frame at top and bottom, and which open frames are incapable of producing the result aimed at in the Jones patent, for instead of removing indentations from sheets of paper, it would produce much worse indentations or impressions than those produced by the act of printing. The same remarks apply to the patents Nos. 169,518 and 125,786.

99 The inventors, if they can be called such, of the bales shown in these three last-mentioned patents never had the least idea of tying up the material they used under pressure for the purpose of removing indentations, nor would these patents, in my opinion, suggest to any one such an idea. As a matter of fact, the matter put up in such bales, instead of being smoothed or the indentations removed from it, had a much greater number of indentations put into it by the pressure than it had before it went through the operation of pressing and tying. There is nothing in the patents just referred to, even when taken in connection with the extracts from the Nicholson work and cy-lopædia, that would in anywise suggest the discovery made by Mr. Jones, that indentations could be removed from printed matter by the process described in his patent.

Mr. Hood next refers to a series of patents showing grooves in the bed and platen thereof and slots in the sides of the box, in which the material to be pressed is placed to undergo the pressing operation, to wit: Nos. 119,195, 58779, 43523, and 9324, not one of which is designed to be used in the manner in which the Jones press is used, nor could it conveniently be used for the same purpose. He also refers to a press patented by W. R. Dingman October 20, 1863, and numbered 40336, which is designed for tying bundles of paper, and it appears to be the only patented press cited that is designed for tying paper into bundles, which is the main object of its invention; the pressing part of the operation of the press being simply an incidental matter designed to bring the bundle of paper into a small compass, and without any idea of removing indentations from the paper set in the press.

Mr. Hood next refers to the patent of Hardesty, No. 2113, which shows a press designed for pressing tobacco into a hogshead, and the only resemblance it has to Mr. Jones' invention is in the fact that it is of a trough-like form, has perforations in the side, and has the head moved by a screw. It is entirely unadapted for the purposes for which Mr. Jones' press is used, and is in nowise analogous either in construction or operation to the Jones press in the patent in suit.

Not one of the patents cited shows a press having cross-ways adapted to receive the arm of the operator so that a bundle may be

readily tied at right angles with a single tie, all of them, ex-
100 cepting the patent to Dingman showing only grooves through which the tying material would have to be passed or drawn through with an instrument such as is shown in Fig. 6 of the Cooley patent No. 58779. The Dingman patent, it is true, shows a press having openings through which the arm can be passed in one direction to allow of the string being readily passed through it, but there is no way shown in said press of tying the bundles crosswise of the ties shown in the drawing of said patent. Mr. Jones appears to have been the first to conceive the possibility of so arranging and constructing the heads of a press that a person could readily tie a bundle of papers in both directions with a single string. To do this it is necessary that both the heads should have cross-ways at right angles to each other of sufficient size to readily insert the arms of the operator and draw the string through and manipulate the rope and secure the end of the string. This cannot conveniently be done with a mere groove, because it requires that, when a single tie is used to secure the package in both directions, the loop or noose at the end of the string or tie shall be arranged over the center of the end board when the tie is completed, which it is very difficult to do—if not impossible—when mere cross-grooves are used, such as are shown in the Cooley patent. In view of the reasons above set forth, I do not consider that any of the patents referred to anticipates the first claim of the Jones patent in suit.

Mr. Hood refers to the Hardesty patent as showing an open horizontal trough-shaped press bed with longitudinal slots or spaces in its sides, and states that, "I do not think it involved invention to incline the press bed, especially in view of the fact that inclined trough-shaped beds or receptacles arranged to receive and hold in regular order a series of folded sheets was a common construction found in folding machines for folding printed sheets." Not one of the patents cited by him, nor do any of the exhibits in this case, so far as I am aware, show a press having an inclined trough-shaped bed of earlier date than the Jones invention. I suppose Mr. Hood refers in the quotation I have just made from his evidence to the patent No. 186,309, which he mentions in his answer to cross-question 61, wherein he states that "the drawings in this patent show a pair of open trough-like boxes inclined at opposite angles." In this, however, he is entirely mistaken. He has probably
101 been misled by Fig. 3 of the drawing of the patent referred to. He has mistaken that figure for a vertical section when it is really a horizontal section, the small rollers marked "e^3" being stated in the specification to be vertical rollers, as will be seen on referring to line 10 of the second column of page 3 of the specification. As these rollers are vertical, it follows that the troughs f^3, k^3 are arranged horizontally, and there is nothing to show that they are inclined at all, but on the contrary the other figures of the drawing show that they are horizontal. In view of this I think I am entitled to consider that Mr. Jones was the first to make an inclined press bed, and in view of the novelty and advantage of such an arrangement I believe that it required invention to conceive

the idea of such an inclined press bed and to embody the idea in a working press, Mr. Hood to the contrary notwithstanding.

To sum up my answer to this question, I may state that I entirely disagree with Mr. Hood's answer to cross-question 59, in which he states substantially that he does not find any invention in the first, second, and fifth claims of the Jones patent in suit, as I regard each of said claims as covering matter that required invention and not anticipated by any of the patents or exhibits in suit. In looking over my testimony, I find I omitted any reference to Mr. Hood's conclusions in reference to the Palmer press. As I understand said press, it is simply used for making bundles of signatures after they have been folded, so that they could be conveniently stored, and was not designed or used for the purpose of taking out indentations, nor were the bundles capable of being tied up in the same manner as they could be in the Jones press. As stated by the witnesses who gave evidence as to the construction of said press, it was necessary to lay two strings across each other in the bottom of the press, which strings were tied separately after the pressing was completed, thus entailing two operations where one only is necessary in the Jones press. I do not believe that the process carried out by the Palmer press is the same process as that described in claim five of the Jones patent, for the process of dry-pressing had already been carried out on the sheets before they were folded, as testified to by the
102 witness Schrank in his answer to question 33, but independently of this, as there were no rigid end boards used it is impossible that the process referred to in claim 5 could have been carried out, even if the press had been powerful enough to produce the necessary pressure, which I doubt, especially in view of the fact as stated by one of the witnesses who testified about the press, that when the bundles were crooked they could be straightened by striking them on the floor.

Q. 4. Do you find in the passage quoted by Mr. Hood from Nicholson's Manual, and the English Cyclopædia, any reference or relation whatever to the removal of type indentations from printed sheets?

A. I do not; in fact, as the printed sheets had the indentations removed in the printing office usually before they reached the binders, there were no indentations to be removed by the processes described in the books you have mentioned.

Q. 5. In the Jones machine does the inclined press bed perform any special function?

A. It does; it has two purposes, one of which is to keep sheets from falling down when piled in the press without the assistance of any device for keeping them in place, such as is necessary when the trough is laid horizontal. The other purpose is to keep one of the heads in such a position that the operator can readily manipulate the tie in the cross-ways.

Q. 6. Do the open cross-ways in the Jones machine perform any special function?

A. They allow the insertion of the hand and part of the arm of the operator, whereby he can readily pass the cord around the bun-

dle of signatures in both directions and manipulate the loop so as to bring it in the center of the end board when the tie is being fastened.

Q. 7. Please state the differences as you understand them between the Jones process and the old-style fuller-board process.

A. In the old fuller-board process the printed sheets were laid in an open state unfolded between fuller-boards, which are comparatively thick sheets of paper or pasteboard, and the pile of printed sheets and fuller-boards was set in the press, generally either a screw press or hydraulic press, and thus great pressure produced upon them. This was generally done over night so that the sheets could be under pressure all night long, and were removed from the press the next morning, so as to allow of the press being used for another lot of sheets to be pressed the next night. I should have stated that besides the fuller-boards there were a number of wooden boards set at intervals in the pile, and as there were frequently nearly as many fuller-boards as sheets of printed paper, comparatively few sheets could be pressed at a time in a large press. As a consequence many presses were required in a large establishment, and many employés required to fill and empty the press.

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In the Jones process the sheets are folded ready for the binder, and are then inserted in the bed of the press with the folded edges all in line, and with end boards at top and bottom of the bundle, after which the press is set in motion until the requisite pressure has been produced, when the operator passes the tie-string around the bundle in one direction and then in the opposite direction and secures the end of the tie. The pressure is removed by running the head of the press away from the bundle and the latter removed for storage or carried to the binder, as desired, after which another lot of signatures is set in the press and pressed and tied as before, so that with one press a very large number of sheets could be dry-pressed and tied in bundles in a very short time, and with even better results as to removing indentations than when the sheets are pressed between fuller-boards in a hydraulic press. These better results are due mainly to the fact that in the old-fashioned process, when two or more sheets were set between each two fuller-boards, the concave part of one impressed sheet would rest upon the convex part of another; whereas in the Jones process one-half of the impressed convex indentations came into contact with corresponding convex indentations on the adjacent pages, whereby each convex indentation acted upon the convex indentation on the other page, and thus tended to flatten each other out. Besides the advantage of the superiority of the work over the old-fashioned process of dry-pressing, the Jones process left the signatures tied up in bundles convenient for storage or for carrying from room to room, whereas by the old-fashioned fuller-board process, if it was necessary to store away the folded signatures, it was necessary to put them through some such process as that described by the witnesses who testified about the Palmer press.

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Adjourned until July 26th, at ten o'clock a. m.

JULY 26, 1895.

Examination resumed pursuant to adjournment.
Present: Same counsel as before.

Q. 8. Would it be possible to accomplish the process of dry-pressing in the Palmer press, as its construction and use is described by defendant's witnesses?

A. It would be practically impossible for the reason that to carry out such process in a practical manner it would be necessary for all the sheets to be set in the same order in the press, that is to say, with the folded edges in line with each other, instead of being "piled up back and front" or "head and tail," as described by the witness Schrank. If an attempt were made to arrange the folded edges of the sheets all under each other, owing to the increased thickness due to the folds, the pile would topple over or the signatures slide off of each other; and if it were practicable to set them in the press with their folded edges in line by one person holding them while another person filled the press, as soon as the pressure was applied there would be a tendency for them to slide more or less out of line, and the result would be that some of the folded edges would project over other of the folded edges and have creases formed in them near the edges, while the projecting folds themselves would not be properly pressed or creased. This would be the case even if end boards, such as are used in the Jones press, were employed, but, as I understand the testimony of the witnesses referred to, rigid end boards were not employed on the Palmer press, which, as I understand the process described in the 5th claim of the Jones patent in suit, is a feature essential to success in the process described.

Q. 9. Was the press shown and described in the Dingman patent intended to be used on printed or unprinted paper?

A. It was intended to be used in a paper mill on unprinted paper, and simply is a convenient way of tying up the unprinted paper in bundles.

105 Cross-examination by GEORGE J. MURRAY, Esq.:

X Q. 10. If the fuller-boards were omitted from the pile of sheets in the old process, would the type indentations be removed or not?

A. I do not think they would, for the reason that the concave impressions would as a rule overlay the convex impressions of the sheet under it and thus form a kind of matrix for them which would prevent the indentations or impressions being properly removed.

X Q. 11. The witness, Mr. Penicks, who is a practical bookbinder, testified that the type indentations were more perfectly removed from the intermediate sheets which did not come in contact with the fuller-boards than they were from sheets which did come in contact with the fuller-boards. Do you think he is mistaken?

A. Mr. Penicks, being a practical binder at the present time, ought to be able to testify as to the question whether intermediate or outer sheets were the better pressed; but I must say that I do not quite understand how the facts can be as he has stated them.

My experience in the printing office is so many years old that I have no recollection at the present time as to whether intermediate or outer sheets were the better pressed.

X Q. 12. Well, if it were true, as Mr. Penicks states, then it would follow, would it not, that you are mistaken about the concave impressions overlaying convex impressions of the sheets in the old process, as stated in your answer to question 10?

A. I do not think so.

X Q. 13. Mr. Penicks has also testified in cross-question 32 that "the convexing and concaving of the indentations of the intermediate sheets between the fuller-boards, and the fuller-boards forming an even, hard substance with the pressure of the hydraulic machines forces the fiber of the paper which has been disturbed by the indentations of type again back to its place," under the old ponderous process. Then you think Mr. Penicks was mistaken in this matter, do you?

A. I do not think that the convexing and concaving of the indentations has anything to do with the success of the process of removing indentations of type by the hydraulic press; on
106 the contrary, I think that if the convex sides of both sheets were put together, instead of the convex fitting into the concave, that the impressions would be easily removed.

At this point the deposition of T. J. W. Robertson — suspended by consent of counsel for the purpose of recalling Thomas B. Penicks.

Examined by Mr. JACOBS:

Q. 1. In my examination the other day, I omitted to ask whether in the old process of dry-pressing the sheets required to be dried before pressing, and whether or not the same was the case in the Jones process. Will you please state how it is?

A. In the old process the sheets after leaving the printing press, the paper being wet, it became necessary to dry them. There was immense long racks with rods on, which slided in and out of the room heated by steam. These wet sheets were then slung across the rods in the racks. After the racks being filled up with the wet sheets they were then shoved back into the drying-room, and allowed to remain there under the heat of steam until they were dry. It would take three or four hours to dry them in the racks just described. In the Jones process the sheets do not have to go through the process of drying, but are folded wet as taken from the press and pressed wet.

Q. 2. Am I to understand you, then, that in the Jones process the sheets are taken directly from the printing press, folded, and put into the dry press?

A. They are.

Q. 3. And, therefore, drying of the sheets before submitting them to pressing is dispensed with in the Jones process, is it?

A. It is.

(Testimony objected to as not proper rebuttal testimony, as being irrelevant and immaterial to any issue in this case.)

THOS. B. PENICKS.

107 Cross-examination of T. J. W. ROBERTSON by Mr. MURRAY resumed:

X Q. 14. I do not understand your last answer. What do you mean by "convexing and concaving," as used in your last answer?

A. I used the words "convexing and concaving" because they were used by M. Penicks. What I meant was, that the raised impression on one sheet would come in contact with the sunken impressions with the sheets above it or below it as the case might be.

X Q. 15. Are you not mistaken as to the use that Mr. Penicks made of the term "convexing and concaving"? I understand from his cross-questions 31 and 32 that what he meant by it was, putting the concave surface to concave surface and convex surface to convex surface. Read his answer to question 31, in which he states that the convexing and concaving of type coming together removed the type indentations in the Jones press; and in the next answer, that the same concaving and convexing removed the type indentations by the old process. Now which is right?

A. At the time I answered that question I had not read the question 31, but I had only seen the question 32 as quoted in your question 13, and I do not now quite understand what Mr. Penicks meant by "convexing and concaving of the indentations," as used in the answer to question 32. As I read your question 13 I understood Mr. Penicks to mean by the term "convexing and concaving" that the sheets were laid with the convex impressions or the convex sides of the sheets in contact with the concave sides of the sheets above them or below them, as the case might be, that being the usual mode of laying sheets in a hydraulic press, instead of having the convex side of the impressions in contact with the convex side of the opposite page, as in the Jones process.

X Q. 16. But Mr. Penicks states that the concave and convex surfaces come together in the same manner in the one process as in the other, does he not, and that it is that convexing and concaving that removes the type indentations when subjected to pressure?

A. I do not understand Mr. Penicks to testify "that the concave and convex surfaces come together in the same manner in
108 the one process as in the other;" he simply refers to the convexing and concaving without stating that they came together in the same manner in the two processes.

X Q. 17. Well, if the concave surface of one sheet came opposite the convex surface of the adjacent sheet in the old process, how do you account for the fact as testified to by Mr. Penicks that the intermediate sheets in the old process had the type indentations more perfectly removed from them than they were removed from the outer sheets which came in contact with the fuller-boards, under the assumption of your former questions, that convex face coming

against convex face was one of the great advantages of the so-called Jones process?

A. I am unable to understand how the intermediate sheets in the old process can have the indentations more perfectly removed from them than from the sheets that came in contact with the fuller-boards. It is possible that the harsh surface of the fuller-board may have some effect on the other sheets that the softer material of the sheets would not have on each other. This, however, is mere theory, and I cannot state positively that such would be the case.

X Q. 18. Didn't the fuller-boards have glazed surfaces, and were they not more commonly called "glazed boards" than "fuller-boards"?

A. The surfaces originally were perfectly smooth, and were sometimes called "glazed boards." I do not know that they were oftener called "glazed boards" than "fuller-boards;" I generally heard them simply called "boards."

X Q. 19. There is no suggestion in the Jones patent in suit as to any advantages the supposed invention attains by reason of the so-called convexing and concaving, is there?

A. I believe not.

X Q. 20. Is there any suggestion in the patent that one string instead of two may be used?

A. There is not.

X Q. 21. The process described in the 5th claim would be the same process whether one or two strings were used, would it not?

A. It would.

X Q. 22. So far as your examination of the arts has gone, was there any device or machine prior to the Jones invention, by which the process of his 5th claim was carried out?

109 A. Now that the process has been invented and patented, I think it possible that the process might be carried out imperfectly in some other presses that have been patented; but I am not acquainted with any press patented or invented prior to the Jones invention described in the patent in suit that could be used to practically carry out the process described in the 5th claim of the Jones patent. By "practically" I mean commercially practically.

X Q. 23. Can the process of the 5th claim be carried out independently of the press described in the Jones patent or any press having similar functions?

A. To carry out the process there must be some means employed for putting the sheets under pressure, but the press need not have the construction nor all the functions shown in the patent in suit.

X Q. 24. What function could you omit from the Jones press and carry out the process?

A. Well, instead of having a screw to press the heads together, the heads might be moved by means of hydraulic machinery, or by a system or levers. As a matter of fact, I believe that in most large establishments the head is now moved by hydraulic power.

X Q. 25. What function of the press shown in the Jones patent is omitted by the changes indicated by your last answer?

A. I do not know, strictly speaking, that there would be any

function omitted by simply changing the screw of the Jones press or substituting therefor hydraulic or other power, but if in addition to that change such a press were set horizontal instead of inclined, it would not have the function referred to in my answer to question 5.

X Q. 26. Do you mean that, if the press of the Jones patent were set horizontally or vertically, that the process of the 5th claim could not be carried out on that account?

A. I do not, for I believe the process could be carried out in a press set horizontally, but not with the same facility as with one set inclined.

X Q. 27. Could the process be carried out if the press were set vertically instead of inclined?

A. I do not think it would be commercially practicable to carry out the process on a vertical press.

110 X Q. 28. Why?

A. It would be difficult to pile the signatures in the proper order in a vertical press.

X Q. 29. State why it would be difficult.

A. The reason is that sheets when folded and before they are pressed are much thicker at their folded edges than at the unfolded edges, so that in attempting to pile them in a vertical press they would be apt to slide off, and it would be very difficult to devise any means to keep the folded edges in line with each other, which it is very necessary to do in the operation of dry-pressing.

X Q. 30. Wouldn't the difficulty you have spoken of be overcome if the folded signatures were subjected to the action of a smasher before placed between the platens of a press?

A. I do not think that the action of a smasher would be sufficient to prevent their folded edges being thicker than the unfolded ones, as the pressure is not retained on them long enough in a smashing press.

X Q. 31. How long would the pressure have to be maintained to press the folded edges flat?

A. I have no means of knowing how long it would take, but I should suppose it would take very nearly as long as it would take to remove the impressions out of the paper in the old-fashioned fuller-board process.

X Q. 32. Is it *in* your opinion that the twine or ties used in the Jones process put any additional pressure on the pile or has anything to do with removing type impressions any more than to retain the pressure of the press until the fiber of the paper becomes set?

A. It is not.

X Q. 33. It's a fact then, is it not, that the pressure exerted removes the type impressions, and the ties only prevent the paper assuming, partially, at least, the condition the paper was in before pressure was applied?

A. That is my understanding of the process.

X Q. 34. If the bundle of signatures were removed from the Jones press without being tied, how long do you think it would

take for the type indentations which had been pressed out to reappear?

A. I have never noticed paper under those circumstances,
111 but should imagine that the impression would reappear immediately to some extent.

X Q. 35. Whether the signatures were separated or not?

A. Yes, if they were not kept under pressure.

X Q. 36. In the Jones patent in suit, the bulk compressor at the right of Fig. 1, is said by the patentee to be for the purpose of taking the swell out of the sheets, which, when first folded, are large at their heads. Was the patentee mistaken in supposing that the smasher would press the folds flat?

A. Such a smasher would undoubtedly take out a good part of the swell, but in its ordinary operation it would still leave the folded edges rather thicker than the unfolded ones, as the fibers would not be set as they would be afterwards in the dry press, which forms the main feature of the patent, and the subsequent treatment to which the sheet would be subjected by being tied up for a lengthened period.

X Q. 37. What keeps the pile of signatures in proper position to prevent them from sliding or slipping one from the other in the bulk compressor or smasher shown in the Jones patent, which is a vertical press?

A. There is nothing shown or described in the patent for that purpose.

X Q. 38. If the bulk of signatures after being compressed in the smasher or bulk compressor shown in the Jones patent were placed between the platens of a vertical press and the platens brought together, do you think the type indentations would be removed from the signatures if the pressure was left on long enough?

A. If the platens were brought together with sufficient force and the pressure retained long enough, I see no reason why the type indentations would not be removed.

X Q. 39. Well, if the same bundle were put in the Palmer press and pressure applied and the bundle tied to retain the pressure, why wouldn't the type indentations be removed if the bundles remained tied long enough?

A. If sufficient pressure could be produced on the Palmer press, the bundle enclosed in proper end boards, and the bundles tied and kept tied long enough, I believe the type impressions would be removed; but at the same time there would most probably be
112 imperfections in the bundle of signatures so pressed, inasmuch as it would be very difficult to keep all the folded edges of the sheets in line, and the result would be that some of the folded edges would overlap the folded edges of the others and thus the sheets would be imperfectly pressed, although the indentations might possibly be removed if great care were exercised in setting the bundle of signatures in the press.

X Q. 40. In view of the fact that it was quite common in the state of the art long prior to the Jones invention to provide guides for properly arranging sheets of paper and other material, one upon

the other, in power presses, do you think it would require invention to provide back or side guides for the Palmer press to retain the bundle in proper position? Your attention is called to the Dingman patent as as an example of a prior patent in which rear guides are provided, and the Kellogg patent having slotted guides all around the platen; to the Stibbs patent, and to many other patents you have referred to in your direct examination.

(Question objected to as assuming a state of the art which has not appeared.)

A. I do not think it would require invention to provide the Palmer press with back or side guides, but even if it were provided with such back or side guides it would not even then, in my opinion, be commercially practicable to carry out the Jones process on it, because to carry out said process commercially it would be necessary that the signatures should be retained in a perfectly even position along the two folded edges, that is to say, the edges forming the top and back of the book when completed. This could not be done conveniently in the Palmer press, even with back and side guides, because there would be a tendency to slide one signature on the other, owing to the thickness of the folded edges. Such guides as are shown in the patents referred to in the question would not keep the sheets in proper position, even if the press had guides all around, as in the Kellogg patent, for it would be necessary that the space inclosed by the guides or sides of the press should be rather larger than the folded signatures, because some of the sheets in folding are not folded perfectly true; hence some of them have a larger surface when folded than others. There would thus be the
113 trouble, which I have before referred to, of the folded edges of some of the sheets overlapping the others, and therefore being imperfectly pressed.

X Q. 41. By "commercially practical," I suppose you mean, that the process carried out on the Palmer press or on the other presses you have referred to could not be economically carried out. Am I right?

A. Generally speaking, that is the way I wish to be understood.

X Q. 42. In criticising Mr. Hood's testimony you say that not one of the patents he refers to was "designed to be used" in the manner in which the Jones press is to be used. What difference would it make, in a patentable sense, what a machine is designed for so long as it accomplishes a particular result?

A. It would make no difference.

X Q. 43. What advantage *has* either shown, described, or indicated in the Jones patent with relation to his machine aside from the process of his 5th claim that is not as fully shown, described and stated in the Dingman patent No. 40336? By the process I mean the removal of type indentations only.

A. I consider the inclined position of the trough or bed as one advantage, and the cross-ways as another, neither of which are shown in the Dingman patent.

X Q. 44. The Dingman patent combines in one machine both

the press and table tie. It effects a great saving of time and labor, the paper is pressed uniform in thickness, no part of the ream can be moved out of its place by the process of tying, and by his process the bundles need not lie loose about the mill and be wasted, as is often the case. What other advantages has the Jones press except the removal of the type indentations?

A. The inclined position of the bed has the advantage of allowing the folded edges of the signatures to assume their proper position, and to prevent the signatures from falling over, and besides this the cross-ways in the heads admit of the bundle of signatures being tied crosswise or with the ties at right angles. None of these advantages is shown in the Dingman patent.

Adjourned until July 27, 1895, at 10 a. m.

114 JULY 27, 1895.

Proceedings resumed pursuant to adjournment.
Present: Same counsel as before.

Cross-examination of T. J. W. ROBERTSON resumed.

Examined by Mr. MURRAY:

X Q. 45. Do you consider claim 1 of the Dingman patent to refer to a process or specific mechanism?

A. It seems to be a combination of the two, both process and specific mechanism. In somewhat similar claims to that in the Dingman patent the courts have construed them to be for the mechanism employed, if I recollect the decisions right.

X Q. 46. The claim is informal, but considering it as a claim for the mechanism, as follows:

"In a paper press and tying engine, the combination of a series of jaws or corresponding upper and nether metallic plates, all disconnected, so that while the paper is being subjected to the required pressure it may be easily tied into reams or bundles." Would you consider the Jones press to contain such invention?

A. If the broad construction usually given to a pioneer in an art were given to this claim, I believe that the Jones press would come under that description; but it may be that in view of the particular specific description of the parts contained in the claim the courts would limit it to the construction shown in the drawing, which the Jones patent does not show.

X Q. 47. Suppose it be limited to the specific elements of a claim like the following:

In a press and tying engine, the combination of the frame, the stationary bed plate consisting of a series of metallic plates disconnected from each other, the movable platen consisting of a series of metallic plates arranged opposite the metallic plates in the stationary bed, and means substantially such as shown to move the upper platen or to form the stationary bed for the purpose of compressing a bundle of sheets and holding the pressure while the bundle is tied.

Would the Jones press contain such invention?

A. I believe such a claim would cover the Jones machine as shown in his patent.

X Q. 48. Assuming the 1st claim of the Dingman patent
115 to be for a process, and, removing the informalities, to read as follows:

The process herein described for treating sheets of paper, the same consisting of subjecting a collection of such sheets to pressure and while under such pressure tying them into compact bundles, and then removing them immediately from the press.

Would the practice of the Jones process as described in the patent in suit be within the terms of that claim?

A. It would.

X Q. 49. Do you consider that the pressure heads shown in the cut on the last page or back of Complainants' Exhibit "Cut of Jones Bundle of Printed Signatures," to be a patentable improvement over the pressure heads shown in the Jones patent in suit?

A. I should hardly say so; it seems to me that they are only mechanical equivalents of the devices shown in the Jones patent in suit for the same purpose.

X Q. 50. Do you consider the adjustable clamp shown in Figs. 3, 6 and 7 on the first page of the exhibit above referred to, to be a patentable improvement over the string or chain ties shown in the other figures on the same sheet and also in the Jones patent?

A. So far as I can see, it is only an ordinary clamp, and while it may contain some feature in the details of construction not now apparent to me which would render the same patentable, I do not consider that, considered simply as a substitute for the tie, it would be an improvement over the cross-tie shown in Fig. 5, because as all the pressure on the boards came in the center of each one, there would be a tendency for the pressure of the paper to bend the boards outwards at their ends, and therefore for the purpose of removing indentations I should consider it an inferior device to the cross-ties shown in Fig. 5, as the pressure on the boards is equal in all directions when the cross-tie is used.

X Q. 51. Would your opinion be the same if two clamps were used, one near each end of the bundle?

A. I think the pressure would be more equable under those circumstances, as there would not be the same tendency to bend the board at the end.

116 X Q. 52. Would the employment of either one or two of these clamps, instead of the cross-tie, be an evasion of the 5th claim of the Jones patent?

A. I think not.

X Q. 53. In the employment of either one or two of these clamps, it would not be necessary to have cross-grooves in the pressure heads, would it?

A. It would not.

X Q. 54. Is there any substantial difference between the pressure heads shown on the back page of this exhibit, and the pressure heads shown in the Cooley patent, No. 58779, except in that there are five grooves or ways in the Cooley pressure heads, while there

are but two in the exhibit referred to? You may also refer to the hand press on the preceding page of this exhibit in answering the question.

A. I consider that there is an essential difference between them, and this difference results from the use of the cross-ways shown in the presses illustrated on the exhibit, which are of such character as to allow of the introduction of the hand and forearm of the operator to allow him to readily tie the bundle of signatures in both directions with one tie, which is an important feature in the rapid working press. The grooves in the Cooley press I do not consider an equivalent of the cross-ways in the Jones press, for the reason that they are not adapted to be used in the same way, as, irrespective of the difference in the position of the grooves, they are too small to allow of the ties being readily passed through without the use of some such instrument as is shown in Fig. 6 of the patent; and even if a tie could be as readily passed through the groove in the Cooley press as it could through the cross-ways in the Jones press, their small size would prevent the ready manipulation of the loop which is necessary in the tying of a single tie crossing the bundle at right angles.

X Q. 55. The grooves in the patent and in the illustration referred to are the same shape in cross-section and are arranged at right angles to each other, are they not?

A. They are, to both parts of the question.

X Q. 56. And the slots in the sides and ends of the press box are arranged in line with the grooves in the Cooley patent, are they not?

117 A. They are.

X Q. 57. In the Craig patent, No. 48523, there is shown in Fig. 3 a bale held compressed by two clamp ties passing over boards at each end of the bale to hold the pressure of the press. Is there any substantial difference between the method of holding the pressure illustrated in the Craig patent, and in Figs. 6 and 7 of the Complainants' Exhibit "Cut of Jones' Bundle of Printed Signatures"?

A. No, sir.

X Q. 58. If instead of the side pieces A in the Archer patent, a single board was used, and printed sheets were baled in the same manner that the substances referred to in the patent were employed, would the practicing of such process be within the 5th claim of the Jones patent?

A. If the boards used were rigid end boards similar to the end boards referred to in the Jones patent, one at the top and one at the bottom of the bale, and the bale were allowed to remain bound sufficiently long to remove the indentations from the printed paper, I should consider that such process would be within the 5th claim of the Jones patent.

X Q. 59. The Palmer device as represented by Respondent's Exhibit "Sketch of Palmer Press," is a bookbinder's press and sheet-tie having compressing heads constructed with cross-ways centrally

arranged through them for the purpose of tying bundles of folded signatures while under pressure, is it not?

A. Broadly speaking, that is correct, but not in the sense of the 1st claim of the Jones patent in suit. The claim is to the special "cross-ways L^2 L^2" constructed to—as stated in about the middle of the first column of page 1 of the specification—"afford*ed* access through them to readily insert and manipulate the twine, and to tie the bundles of paper while held compressed, thus securing the bundle together by a powerful tie." Such cross-ways are not shown in the Palmer press.

X Q. 60. The cross-ways L^2 L^2 are centrally arranged through the compressing heads of the Jones patent for the purpose of allowing the strings to pass through them to tie the bundle while under pressure. Isn't the same true of the cross-heads on the Palmer press?

A. If I correctly remember the testimony of the witnesses who have testified about said press, two strings are used in tying up a
118 bundle, which are laid in the grooves in the bed of the press before the paper is put in, and, after the paper is put in and pressed, the strings are passed through the grooves in the top block and tied; whereas by the construction of large-sized cross-ways, such as are referred to in the 1st claim of the Jones patent, a single string is used which is tied cross-wise of the bundle of signatures, so that it would take less time, probably, to tie the bundles both ways with a single tie than it would take to tie a single string by the method employed in the Palmer press.

X Q. 61. Is it anywhere stated in the specification of the Jones patent that one string instead of two strings is employed in tying up bundles?

A. Not in those precise words, but I find in the first column of page 2 of the specification two references to the tie, in each of which the word "tie" is used in the singular, and nowhere do I find it referred to in the plural. I also find in a number of other places in the specification that the word "tie" is used in the singular.

X Q. 62. Is there anything in the drawing of the Jones patent to indicate whether two strings or one string is used?

A. There is not.

X Q. 63. Would it require any invention to change the ways in the Palmer press to the shape of the ways shown in the Cooley patent?

A. It would not, but even then such ways would not be the equivalents of the cross-ways of the Jones patent.

X Q. 64. Not even if the circular openings were made large to pass the hand and arm of the operator through them?

A. If they were made large enough to pass the hand and arm of the operator through them, they would then be the same practically as the cross-ways in the Jones patent.

Redirect by Mr. JACOBS:

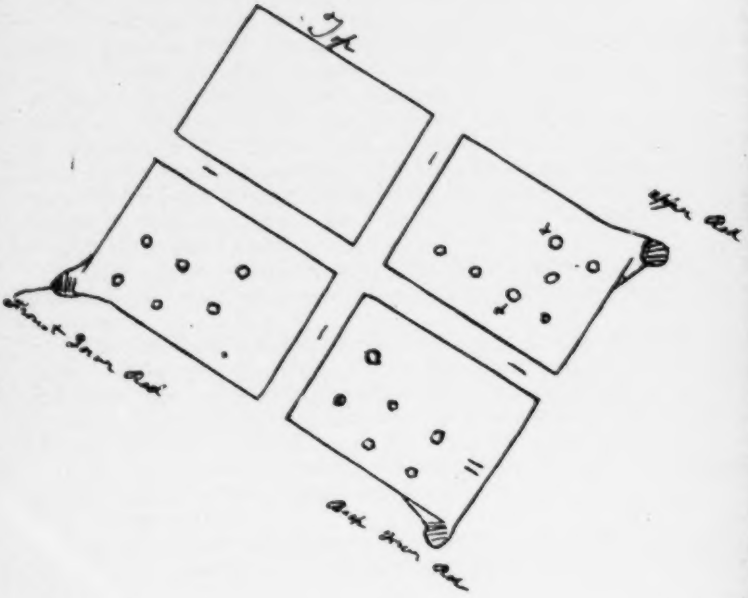
R. D. Q. 65. You have been asked somewhat about the Dingman press. Was it anything but a mere machine for loosely bundling unprinted paper?

APPENDIX.

COMPLAINANTS' EXHIBITS.

"Complainants' Exhibit Miller Sketch."

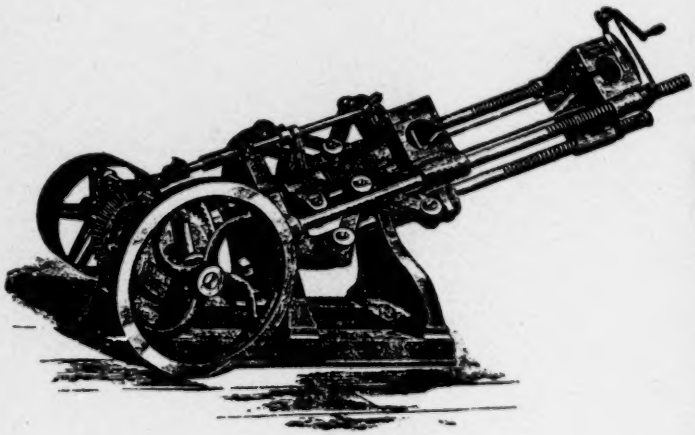
(Offered in evidence page 15.)



No. 96.
Busch
v.
Jones et al
p. 121

"*Complainants' Exhibit Wood cut of Seybold Signature Press.*"

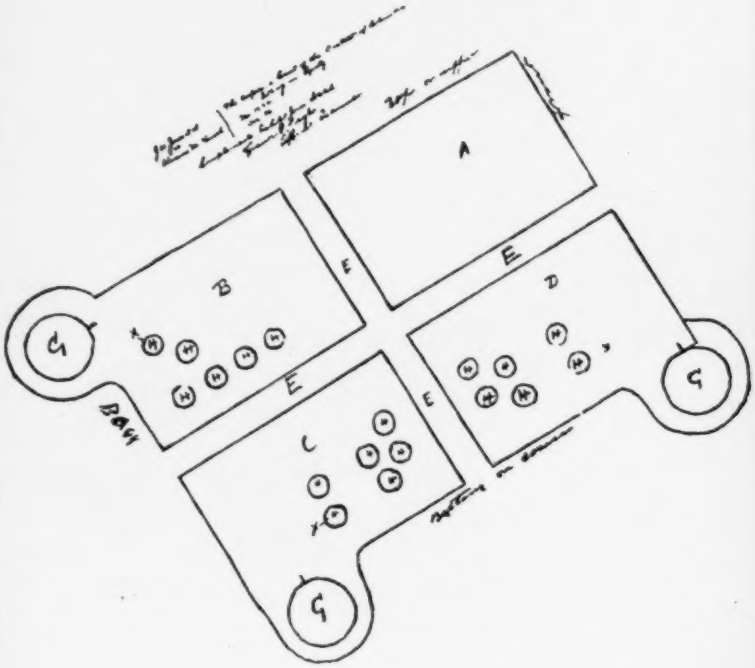
(Marked for identification page 10.
Offered in evidence page 16.)



No. 96.
Busch
v.
Jones et al
} p 122.

"*Complainants' Exhibit Jones Sketch.*"

(Offered in evidence page 21.)

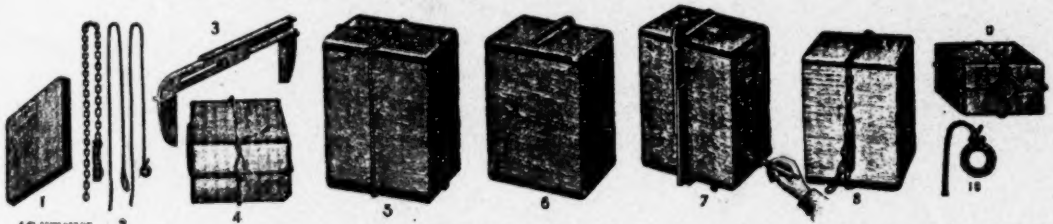


No 96
Busch
v.
Jones et al
} p. 123

"Complainants' Exhibit Jones Form of License."

(Offered in evidence page 22.)

ILLUSTRATING PATENT PROCESS DRY-PRESSING AND SHEET-TYING.



1. Rounded outer edges End Board. 2 and 10. Chain and rope ties. 3. Adjustable clamp. 4, 5, 6, 7, 8 and 9. Bundles of signatures, books, or paper, illustrating Patented Process, Dry-Pressing, Sheet-Tying, Smashing, Tableting. NOTE.—The clamp is used for lifting the work out of the press when smashed, and firmly holding the same until it is passed over the saws, or to the sewing machine, and also to hold firmly paper or sheets for gluing tablets, pamphlets, &c.

LETTERS PATENT No. 204,741.—"Claim 5. The process herein described for treating folded printed sheets of paper in dry-pressing, the same consisting of subjecting a collection of such sheets to pressure without the use of fuller boards, and while under such pressure tying them into compact bundles with end boards, then removing them immediately from the press and allowing them to remain tied sufficiently long to fix and complete dry-pressing.

(*Continued on next page.*)

"*Complainants' Exhibit Hydraulic Presses.*"

Illustrating the old process of pressing between fuller boards.

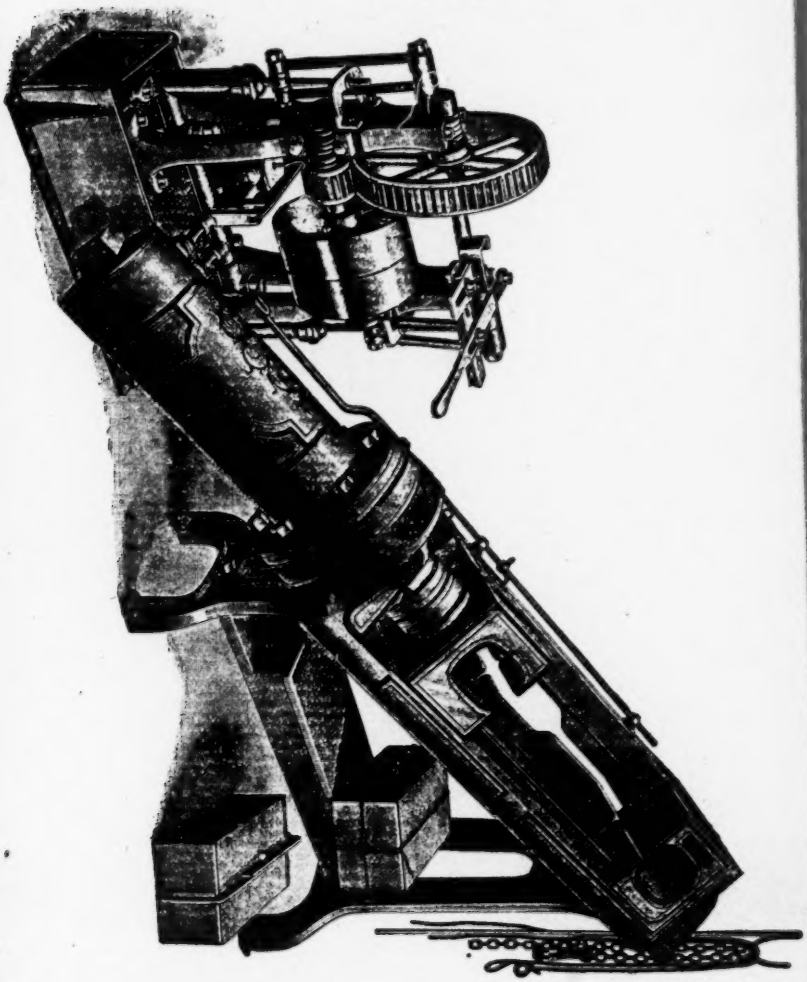
(Offered in evidence page 62.)

From "The Harper Establishment" Copyright, 1854, by Harper & Brothers.

No. 96
Busch } p. 126

"*Complainants' Exhibit Cut of Jones Signature Press used in the De Vinne Press.*"

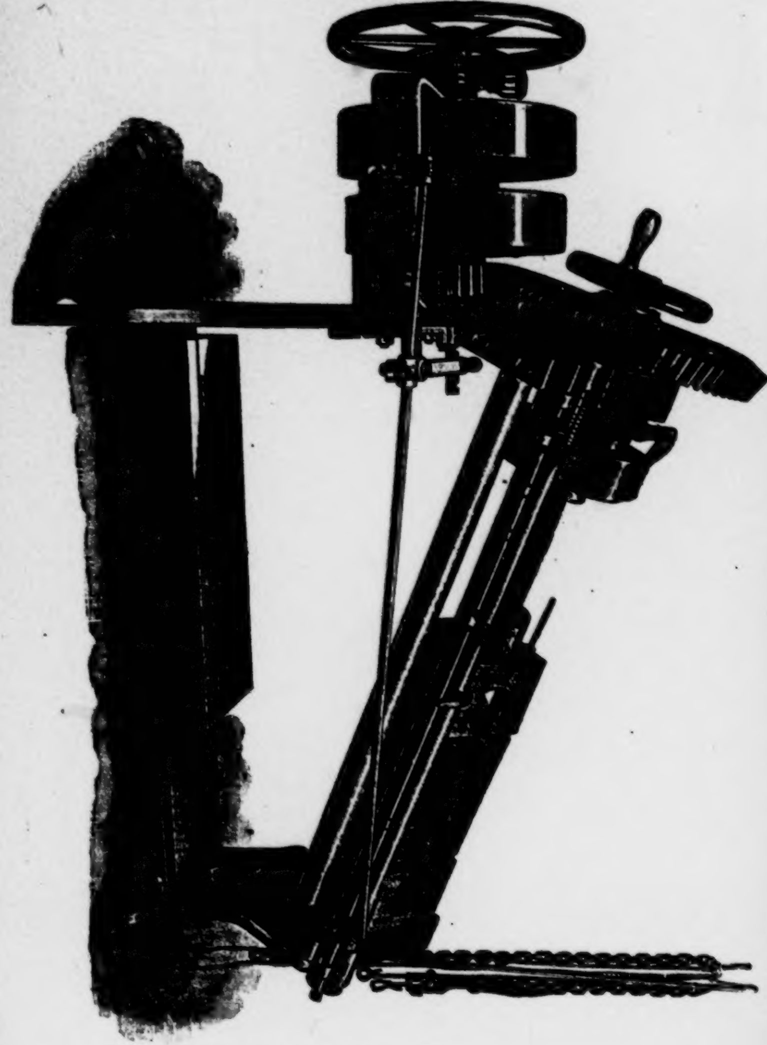
(Offered in evidence page 62.)



No. 96.
Busch
Jones Cut.
p. 1209

"*Jones' Steam Screw-Power Signature Press.*"

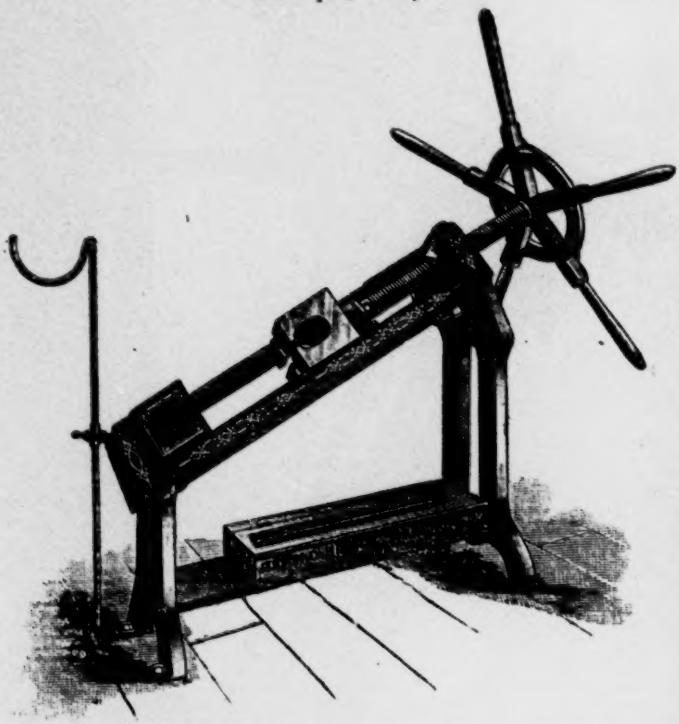
(Referred to by Defendant's Counsel, Plaintiffs' printed record pages 99-100.)



No 96
Busch } p. 131

"Jones' Hand Power Signature Press."

(Referred to by Defendant's Counsel, Plaintiffs' printed record page 100.)



No 96.
Busch } p 132
Jones et al

A. That is all, and from the construction of the mechanism for raising and lowering the upper plates it would seem to be incapable of producing much pressure.

R. D. Q. 66. Is it your understanding of the Jones process
119 that the type indentations are removed by the exertion of the pressure in the machine or by the retention of the pressure on the bundles?

A. By the retention of the pressure in the bundles, because if after a bundle has been pressed it is immediately opened the indentations will still appear; this is further proved by the fact that the longer the bundles stay tied up the better are the impressions removed.

R. D. Q. 67. Referring to your answer to cross-question 43, are not the adjustable guide-rods another advantage?

A. They are.

T. J. W. ROBERTSON.

Complainants give notice that they have closed their testimony. Certificate of notary waived by defendant's counsel.

120 (Here follow diagrams marked pp. 121, 122, 123, & 124.)

125 Office of J. W. Jones patented process signature press for dry-pressing, sheet-tying, smashing, and tableting.

No. of press, —; style —; No. of license, —.

License.

In consideration of the sum of — dollars to me in hand paid, by —— ——, of the city of ——, in the county of —— and State of ——, the receipt whereof is hereby acknowledged, I do hereby license and empower the said —— —— to use in said city of —— at shop situate ——, and nowhere else, on machine style —, No. —, my improved process of dry-pressing and sheet-tying as described in the specification and pointed out in the fifth claim of my patent, No. 204,741, granted to me on the 11th day of June, 1878, from the time this license is made to the end of the term for which said letters patents are granted.

And for the same consideration, I hereby agree, in case of removal or sale by the said licensee, to transfer the right to use said process to the new shop or the bargainee as the case may be.

Signed at Harrisburg, in the county of Dauphin and State of Pennsylvania, this — day of ——, 18—.

—— ——, *Patentee.* [L. S.]

Accompanying license No. —.

Bearing even date herewith.

I hereby also convey to —— —— the right to manufacture or supply — for — own use and to be used only on machine No. — my patent end boards as set forth in patents Nos. 204,741 and 212,947.

Signed at Harrisburg, in the county of Dauphin and State of Pennsylvania, this — day of ——, 18—.

—— ——, *Patentee.* [L. S.]

(Here follow diagrams marked pp. 126 & 127.)

128 "Complainants' Exhibit Cut of Jones Bundle of Printed Signatures," offered in evidence page 62, is the same as the cut at the head of "Complainants' Exhibit Jones Form of License," *supra.* Page 108.

"COMPLAINANTS' EXHIBIT THOMAS B. PENICKS' LETTER OF FEBRUARY 25, 1879."

(Offered in evidence, page 77.)

OFFICE OF PUBLIC PRINTER,
WASHINGTON, *February 25th*, 1879.

Mr. John D. Defrees, public printer.

SIR: Your note of the 23d inst., asking my opinion of the advantages and value of J. W. Jones' patent hydraulic printers and binders' pressing machine, is at hand.

I am pleased to have the opportunity of bearing testimony to the worth of these valuable machines. The three octavo and one quarto machines have been in operation several months. I have made daily examinations of the work pressed.

There has not been a single instance of set-off. The work is equal, if not superior, to the old style of pressing, and is done with great rapidity. We have pressed and tied up 500 octavo sheets in 2¼ minutes. I think a fair average would be 6,000 sheets per hour. One of the greatest advantages of the machine is the solidity of the bundles for storage purposes. These machines will in a short time pay for themselves, alone, in the saving of sheets, soiled by the old style of pressing and tieing up. The longer I use the machines the better I like them, and I should dislike very much to do without them.

Respectfully, &c., THOS. B. PENICKS,
Sup't Folding Room.

129 "COMPLAINANTS' EXHIBIT THOMAS B. PENICKS' LETTER OF FEBRUARY 5TH, 1880."

(Offered in evidence, page 77.)

GOVERNMENT PRINTING OFFICE, *February 5th*, 1880.

Hon. John D. Defrees, public printer:

In reply to your letter of inquiry relative to the merits of J. W. Jones' hydraulic pressing machine and process, I can only say, that a year's experience confirms a previous testimonial in behalf of these machines. With our seven machines, we can press and tie up, hourly, 52,500 octavo 16-page sheets. The indentations of the

type are entirely removed; I have yet to find a single instance of set-off. For rapidity in pressing and compactness of the sheets, the machines have no equal. I now press all books after being gathered. This is a great advantage to the binder, as it makes the books all regular, more solid, ready for sewing, and invaluable for storing.

Respectfully, &c., THOS. B. PENICKS,
Superintendent.

"COMPLAINANTS' EXHIBIT THOMAS B. PENICKS' LETTER OF AUGUST 3RD, 1886."

(Offered in evidence, page 77.)

GOVERNMENT PRINTING OFFICE, FOLDING-ROOM,
WASHINGTON, D. C., *August 3d*, 1886.

Hon. S. P. Rounds, public printer.

DEAR SIR: The hydraulic pressing machines of J. W. Jones, of Harrisburg, Pa., were introduced in this office in the year 1878. We, like most all other printing establishments, used the ponderous dry-pressing machine, pressing the sheets between fuller-boards. This process was slow and expensive. After introducing the first four of Jones' hydraulic pressing machines, the pay-rolls of the drying-room *was* reduced about $68.00 per day. We have now in use fourteen machines, 9 octavos and 5 quartos. These
130 pressing machines remove all the indentations of the type from printing. I have given this process the severest test on plate-work, and as yet, I have been unable to discover any set-off. After the work is pressed in bundles it still retains the pressure. This is a great advantage to the work, and also for storing purposes. This office uses 32,000 square feet for storing pressed sheets and books. Were it not for the use of these machines, we would require double of our present storing capacity. The pressed work, also, lessens the chance of destruction by fire. All books gathered are pressed; they are then ready for sewing. This does away with the old process of smashing or pressing in standing presses by the binder. These hydraulic pressing machines are invaluable to this office; and I believe for economy, perfection of work, and labor-saving, the best piece of machinery ever introduced in the trades of printing and binding.

Respectfully, &c., THOS. B. PENICKS,
Supt. of Folding-room.

Other exhibits were offered in evidence by complainants, viz:
"Complainants' Exhibit Model No. 1" (printed Record, page 16).
"Complainants' Exhibits Printed Sheets A 15, A 15*, B 15, B 15*" (printed Record, pages 5 and 16).
"Complainants' Exhibit Sample of Press-board" (printed Record, page 62).

(Here follow diagrams marked pp. 131 & 132.)

135–137 In the Court of Appeals of the District of Columbia.

CLARENCE M. BUSCH, Appellant, *vs.* J. W. JONES and THE W. O. HICKOK MANUFACTURING COMPANY, Appellees.	No. 903, October Term, 1899.

It is hereby stipulated and agreed by and between counsel for the parties hereto that there is no question concerning the incorporation of The W. O. Hickok Manufacturing Company, one of the appellees, and that printing of "Complainants' Exhibit Certified Copy of Articles of the W. O. Hickok Manufacturing Company" may be dispensed with. It is further stipulated and agreed that a copy of "Complainants' Exhibit Contract of Jones and Hickok Manufacturing Company" and a copy of the specification of U. S. patent No. 9324, dated October 12, 1852, to Kellogg, may be printed in their proper places in the transcript of record for this court.

CHAS. E. RIORDON,
Of Counsel for Appellant.
M. W. JACOBS,
Of Counsel for Appellees.

August 31, 1899.

(Endorsed:) Court of Appeals, D. C., October term, 1899. No. 903. Clarence M. Busch, appellant, *vs.* Joshua W. Jones *et al.* Stipulation of counsel. Court of Appeals, District of Columbia. Filed Sep. 6, 1899. Robert Willett, clerk.

1561

J. W. JONES.

Book-Binders' Dry-Press and Sheet-Tie.

No. 204,741. Patented June 11, 1878.

No. 96 Busch & Jones vol. p. 138

Fig. 1.

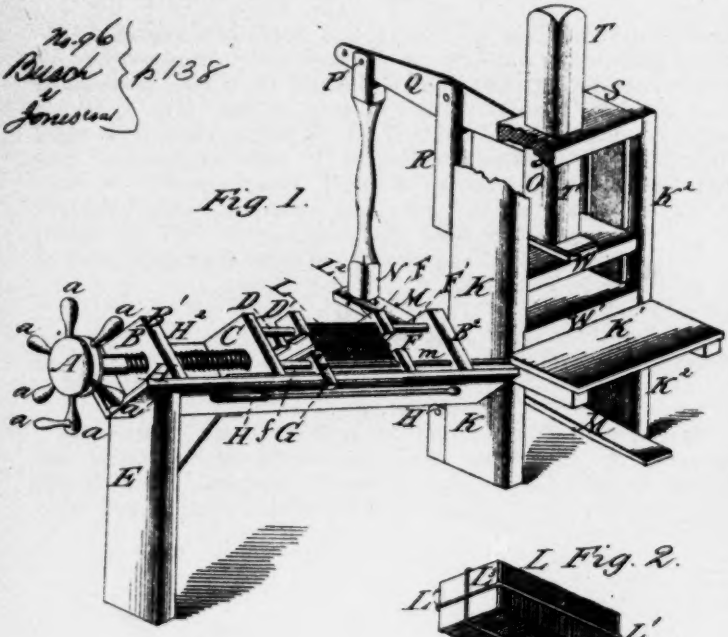


Fig. 2.

Fig. 4.

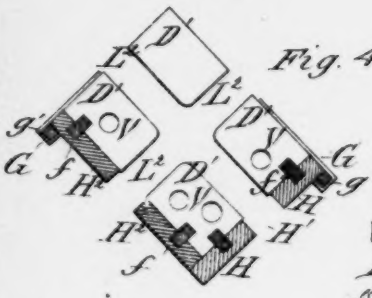
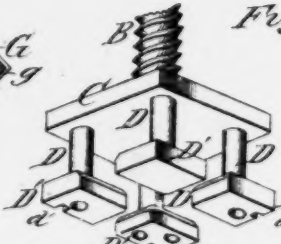


Fig. 3.



Attest:
Thomas W. Lamant
W. H. Smith N.O.

Inventor
Joshua W. Jones

139 UNITED STATES PATENT OFFICE.

JOSHUA W. JONES, of Harrisburg, Pennsylvania.

Improvement in Bookbinder's Dry-press and Sheet-tie.

Specification forming part of Letters Patent No. 204,741, dated June 11, 1878. Application filed October 24, 1877.

To all whom it may concern:

Be it known that I, Joshua W. Jones, of the city of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a new and useful improvement in bookbinder's dry-press and sheet-tie, which improvement is fully set forth in the following specification and accompanying drawing, in which—

(Here follows diagram marked p. 138.)

Figure 1 is a perspective view of my invention, exhibiting a bundle of sheets in the press tied and ready for removal therefrom. Fig. 2 is a perspective view of a bundle of sheets tied and ready for setting aside, as by my process of treating printed papers or sheets to remove therefrom the indentations of types. Fig. 3 is a perspective view of my divided press plunger or follower. Fig. 4 is a cross-sectional view of my press-frame and the divided follower applied thereto, the view being taken at indicated line *x*, Fig. 1.

The object of my invention is, first, to furnish a bulk-compressor device, to be used to prepare the matter properly before it is inserted in the dry-press proper, thus saving time or repeated travel by the latter, before the operation of tying; second, to furnish a dry-press proper in which the compressing parts or heads—that is, the base and plunger—are constructed dividedly, or with ways through them, to afford access through them to readily insert and manipulate the twine, and to tie the bundles of paper while held compressed, thus securing the bundle together by a powerful tie, which, when they are removed from the press, retains its force *ad libitum;* third, a press-frame, having sides peculiarly set and arranged, and provided with longitudinal slots therein corresponding with the ways in the press-heads, above referred to, and for the same purpose, as well as to rightly lodge and center the paper with relation to the middle of the press-heads; fourth, certain ledges in the said press-frame and guides on the plunger thereof, to properly center different-sized sheets in press to secure the tie at the middle of the bundles both ways; fifth, a new process for treating printed and folded sheets of paper in dry-pressing, consisting of subjecting a collection of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles, with end boards thereon; then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete the dry-pressing.

My bulk-compressor (shown at right of Fig. 1 in drawing) consists of uprights K K^2, transverse parts K^1 S W′, the treadle M, connected by link N P to lever Q, which, by being pivoted to bracket R, operates the plunger T W, to which it is also pivoted. The folded sheets, which are swelled or large at their heads when first folded, are placed upon the base W′ and smashed—that is, the swell is taken out of them—by the plunger W, to bring the bulk into manageable compass for ready insertion into the dry-press and sheet-tie proper, so that about five hundred folded sheets may be pressed and tied at one operation, that number of sheets being usually put into one bundle. The said compressor device is therefore connectedly arranged with or near to the said dry-press device, that work may be readily transferred from the former into the latter.

The left part of Fig. 1 in drawing represents my improved dry-press and sheet-tie device.

The operations of dry-pressing and sheet-tying are accomplished by the same device. It consists of a bed, H H^2, mounted upon uprights E and K, in such manner that it has a downward inclination from the former to the latter upright, as shown in Fig. 1, and the sides of said bed H H^2 are set laterally inclined, trough form, so that the folded paper may securely lodge and carry therein while being operated on. The sides H and H^2 of said bed are longitudinally slotted at H^1 to correspond with the open ways L^2 L^2 of the press-heads, as shown in Fig. 4, to afford access to the work while in the press to tie into bundles, as shown in Figs. 1 and 2.

In the trough of said bed H H^2 are firmly attached thereto the blocks B^1 B^2, in position as shown. Block B^2 is the base of the divided head F F F′, constructed with openings or ways L^2, similar to the plunger-head shown in Figs. 3 and 4. The divisions F F of said head are supported, either on pedestals F′ or on the frames H and H^2, at suitable distance from base B^2, to enable the operator to pass the hand between said parts while applying the tie.

Block B^1 is, in the present illustration, shown to be a stationary nut, in which the screw B serves to operate the plunger or follower C D D′, which is connected by swivel to said screw, and the screw is provided with handles *a a′* about its head A. It is, however, evident that said follower may be actuated by other mechanical means; also, that two such followers may be made to act in conjunction. I do not therefore limit myself to screw-power, nor to a single follower, as in practice both heads of the press may be made movable, and other than screw-power may be employed, the more definite limits of my invention being in the make of the heads, they being slotted or thorough-channeled by cross-ways L^2 L^2, corresponding with slots H^1 of the bed.

The follower or plunger head shown in Fig. 3 consists of the base C, pedestals D, and bearing-divisions D′, disposed oppositely about the central cross-ways L^2 L^2, as shown, the plan being similar to that of the stationary or opposite head B^2 F′ F; and the bundle of sheets L is inserted between said heads, as shown in Fig. 1, it being cross-tied over end boards L^3 by twine L^1, as shown in Fig. 2.

It may be noticed that the bodies or bundles of the folded sheets

are so located in the press-trough H H^2 that the middle part of the ends of said bundles may come under or opposite the middle part of the press-heads—that is, in right position before the ways L^2 L^2—to secure the tie over the middle of bundles both ways.

When large work is being pressed and tied, no special adjustment of the press is needed to locate the work centrally, as described; but when intermediate and small-sized work is operated on, it is kept properly distanced from the press-sides H H^2, either by removable ledges *f* lodged in grooves in said sides H H^2, as shown, or by sliding adjustable rods *m*, removably attached to the plunger-divisions D′ at *v*, and allowed to pass freely through the parts F, B^2, and K. (Shown in Fig. 1.) That said plunger D D′ C may not be sprung out of its true line of travel, owing to the pile of folded sheets canting, it is stayed laterally to the press-sides H H^2 by clips G G, made to embrace and slide along them, as shown in Figs. 1 and 4.

In my improved process of dry-pressing, the end boards on the bundles referred to are shown in Fig. 2 in position on the bundle, immediately under or subject to the tie. They are used on the ends of the bundle of the paper under treatment to distribute the pressure over the whole area of the ends of the bundle, and also to prevent cutting or marring of the paper by the twine or other tying material. Said end boards are made of any suitable material affording strength and rigidity at little cost, and of suitable size to nearly match the size of the folded work.

Besides the advantage attained by my improvement in rendering dry-pressing speedier, less laborious, and less expensive than by the processes heretofore employed, it also makes the work more convenient to handle and rank up until required for binding, and avoids the not infrequent mishap of tumbled and scattered work on the floor of the bindery, and consequently lessens the risk from fire.

Having thus described my invention, what I desire to secure by letters patent is embraced in the following claims:

1. In a printer's and bookbinder's dry-press and sheet-tie, the compressing-heads C D D′ and B^2 F′ F, constructed with cross-ways L^2 L^2, centrally arranged through them, substantially as and for the purposes herein set forth.

2. The inclined press-bed H H^2, provided with longitudinal slots H^1 H^1 in its sides, in combination with the press-heads B^2 F′ F and C D D′, having through them the cross-ways L^2 L^2, correspondingly arranged with said slots, substantially as and for the purpose set forth.

3. The press-head C D D′, connected by swivel with screw B A *a a′*, and made to travel as a plunger in the nut or block B′, in combination with bed H H^2 and clips G G, substantially as and for the purpose set forth.

4. In combination with the dry-press bed H H^2, the device of a set of removable ledges, *f*, or a set of adjustable guide-rods, *m*, arranged as and for the purpose set forth.

5. The process herein described for treating folded printed sheets of paper in dry-pressing, the same consisting of subjecting a collec-

tion of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles with end boards, then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete dry-pressing.

In testimony that I claim the foregoing as my invention I have hereunto set my hand and seal this 20th day of October, 1877.

JOSHUA W. JONES. [L. S.]

Witnesses:
THOMAS McCAMANT.
W. H. SMITH.

141 COMPLAINANTS' EXHIBIT CONTRACT OF JONES AND HICKOK MANUFACTURING COMPANY.

Articles of agreement, made the 27th day of December, 1889, by and between Joshua W. Jones, of the city of Harrisburg, State of Pennsylvania, of the first part, and the W. O. Hickok Manufacturing Company, a corporation doing business under the laws of the State of Pennsylvania and located in said city of Harrisburg, of the second part.

Whereas, the said party of the first part has invented certain new and useful improvements in the method or process of dry-pressing as set forth in letters patent No. 204,741, granted to him on the 11th day of June, 1878, and certain improvements in mechanism and appliances for carrying out said method or process as set forth in said letters patent No. 204,741, in letters patent numbered and dated as follows: Nos. 212,977, M'ch 4, 1879; 219,734, Sept. 16, 1879; 223,355, Jan. 6, 1880; 224,696, Feb. 17, 1880; 247,197, Sept. 20, 1881; 9598, reissued M'ch, 1881; and in certain applications now on file in the U. S. Patent Office; and

Whereas, the said party of the first part has made or caused to be made divers valuable patterns of which he is now possessed for making said mechanism and appliances; and whereas the said party of the first part has created a demand for and established a lucrative business in the manufacture and sale of said machines and the right to use the process of dry-pressing and sheet-tying, and whereas the said party of the second part is desirous of acquiring a license as sole licensee from said party of the first part to manufacture and sell said machines and appliances together with the right to use said patterns in making said machines and appliances, and also of acquiring the business established by said party of the first part in the particular branch of the art to which said inventions pertain, upon terms mutually advantageous to both of said parties, it is therefore agreed by and between said parties as follows; that is to say:

The said party of the first part, for the considerations hereinafter named, does hereby agree to empower and license and does by these presents empower and license the said party of the second part to manufacture and sell the several machines, articles and appliances

covered by the letters patent already obtained and those which may hereafter be obtained by himself or others in the manner hereinafter mentioned or by assignment; and does also for the said considerations agree to transfer and turn over to the said party of the second part all business that he now has relating to said machines, articles and appliances, together with all patterns, with the right to use the same, now owned or used by him in the manufacture of said machines, articles and appliances or any of them, and any cuts or other articles which may or will assist the said party of the second part in placing the said business before the public.

The said party of the first part further agrees that the
142 license hereinbefore provided for shall be an exclusive one, and that he will not, during the lifetime of this contract, give or grant any other license or right to manufacture or sell said machines, articles and appliances or any of them, to any other corporation, person or party whatsoever.

In consideration whereof, the said party of the second part doth hereby agree:

1. To pay to the said party of the first part, his heirs or assigns, a royalty of twenty-five per centum on the selling price of all machines manufactured and sold, and ten per centum on all supplies and appliances used in connection with such machinery, and supplied by the said party of the second part.

2. To keep a strict and proper account of all sales; to render to the said party of the first part a full and true statement of said sales, and the royalties herein reserved quarterly on the first day of January, April, July and October in each year, during the lifetime of this contract, which royalties shall become due and payable within thirty days thereafter, and to give to the said party of the first part free access to the books of the said party of the second part, at all reasonable times, to enable him to examine the same and verify such statements, if he should so desire.

3. The royalties payable to the said party of the first part under this contract shall be held to apply to all machines, appliances or articles manufactured and sold by the said party of the second part, its successors and assigns, and containing any of the processes, improvements or devices covered by said letters patent or any of them, or by any patents which may hereafter be issued to the said party of the first part or be owned by him, relating to the process of dry-pressing and sheet-tying, whether some or any of said letters patent shall have expired or not, but this contract shall not preclude or prevent the said party of the second part from manufacturing and selling other machines, appliances or articles designed to accomplish the same results, which do not in whole or in part contain any of the processes, devices or improvements covered by any existing or expired letters patent then owned by the said party of the first part; provided, however, that if at any time during the lifetime of this contract, by reason of the expiration or invalidity of one or more of the patents now owned or hereafter obtained or acquired by the said party of the first part, other corporations or parties shall be enabled to manufacture and sell said machines, appliances or

articles, or those similar thereto and capable of accomplishing the same results, so that the said party of the second part cannot compete therewith in the open market at the royalties hereinbefore provided, then and in that case there shall be such a re-rating or readjustment of said royalties as will admit of such competition and be then mutually agreed upon, to the end that the interests of both parties to this contract shall be fully protected, and the purpose thereof be fully carried out to the full end of the term thereof. And provided further, that if the said parties cannot agree as to the royalties, so as to be re-rated and readjusted, then and in that case each party shall select one disinterested person who shall
143 thereupon re-rate and readjust said royalties, and if the persons so chosen cannot agree they shall in turn choose a third person as an additional arbitrator and the decision of the three persons so chosen as to the royalties aforesaid shall be final and binding upon both of said parties.

4. That if said party of the second part or any of its agents or workmen should at any time, during the existence of this contract, make or discover any improvements to the said machines, articles or appliances, or any of them, whether patentable or not, the same shall be considered the property of the said party of the first part, and if any letters patent be obtained therefor by the said party of the second part or in its behalf, such letters patent shall be assigned to the said party of the first part without further consideration, and if in the opinion of the said party of the first part the improvement is patentable or worthy of a patent, the said party of the second part will execute or have executed all the necessary papers to secure proper letters patent or patents and the issuance of the same to the said party of the first part as its assignee, at his expense.

5. The said party of the second part further agrees to make all reasonable efforts to create and stimulate a market for said machines, appliances and articles, and generally to push the said business for the mutual benefit and advantage of both parties hereto.

It is also mutually agreed and understood, without further consideration, that the said party of the first part does not by this contract assign or agree to assign any of his right, title or interest in said invention patented now or to be patented hereafter, except that the said party of the second part shall be the sole licensee while this contract exists.

It is also mutually agreed and understood, without further consideration, that this contract shall run for twenty years and so long thereafter as the said party of the second part, its successors or assigns, shall manufacture or sell or procure others to manufacture and sell any machines, supplies or appliances for carrying out the process of dry-pressing or sheet-tying set forth in said patents now existing or to be procured hereafter or any of them, subject, however, to the stipulations and provisions hereinbefore contained and reserved in clause three (3).

It is also mutually agreed and understood, without further consideration, that this contract covers the manufacture and selling by said party of the second part whether it be done in its own shops or

at the shops of other parties with the consent and allowance of said party of the second part.

It is also mutually agreed and understood, without further consideration, that this contract binds said party of the first part his heirs or assigns and said party of the second part its successors or assigns for the full period for which the same has to run under the terms and conditions hereinbefore specified and contained.

It is further agreed that the said party of the first part shall turn over and assign to the said party of the second part all complete machines and appliances heretofore made for him since April 1st, 1889, and remaining unsold, and also all circulars, cuts and
144 printing matter or material, used or owned by him in advertising the said business, and in consideration thereof the said party of the second part agrees to pay to him in cash the sum of $68.00, for circulars, envelopes, etc., and on all unsold machines and appliances in stock to pay when sold the royalties provided for in clause one (1) of this agreement.

In witness whereof, the said party of the first part hath hereunto set his hand and seal and the said party of the second part hath caused to be hereunto affixed its corporate seal attended by the signature of its secretary this 27th day of December, 1889, in duplicate.

J. W. JONES. [SEAL.]
THE W. O. HICKOK MFG. CO.,
By ROBERT SNODGRASS,
For the President.

Attest: LUCIUS S. BIGELOW, *Secretary.*

Deposition of Harrison P. Hood.

Filed October 7, 1895.

Supreme Court of the District of Columbia, Sitting in Equity.

JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Company
vs.
CLARENCE M. BUSCH.
No. 15391, Doc. 36.

Taking of testimony and offering of evidence in the above-entitled cause before David S. Oliver, notary public, No. 28 Wiggins block, Cincinnati, Ohio, commencing Thursday, June 13th, 1895, on behalf of respondent, pursuant of agreement of parties.

Present: M. W. Jacobs on behalf of complainant-, and George J. Murray on behalf of respondent.

HARRISON P. HOOD, witness produced on behalf of respondent, being first duly sworn, deposes and says, in answer to interrogatories propounded to him by Mr. Murray, as follows:

Q. 1. State your name, age, residence and occupatien.

A. Harrison P. Hood; 54; Indianapolis, Indiana; patent solicitor and expert.

Q. 2. Please state what, if any, experience you have had as a practical mechanic, and also what experience you have had in reading and interpreting letters patent or mechanical inventions that would enable you to testify as an expert in suits brought for infringement of letters patent.

A. For more than twenty years past I have been engaged in preparing and prosecuting applications for patents for new inventions. During the greater portion of this time I have carried on in connection with my office, a workshop where, under my direction, models of new inventions have been made, experimental machinery
145 has been constructed, and I have made a business of putting into practical shape the ideas of the inventors. I have also been frequently called upon to testify as expert in patent causes in which were involved the examination of mechanical devices and the reading and construing the letters patent in connection therewith.

Q. 3. Have you examined letters patent of the United States No. 204,741, dated June 11, 1878, upon which this suit is founded, said patent being identified in the record as "Complainants' Exhibit Jones Patent No. 204,741," and do you understand the same?

A. I have examined Complainants' Exhibit "Jones Patent No. 204,741," and I do understand it.

Q. 4. Please state what you understand the invention to be that is described in this patent and pointed out in the claims, your attention being called particularly to claims 1, 2, 4 and 5 of the said patent, and, in order to make your answer clear, you may refer to the letters patent and publications before you, identifying each as you refer to it, and give your reasons for any opinion you may express.

A. The invention shown and described in the Jones patent No. 204,741, relates to a means for removing from printed sheets the type indentations and elevations made during the process of printing, whereby a smooth surface is given to the back side of the printed sheet. One of the methods in common use for accomplishing this result, at the time of the filing of the application of the Jones patent was as follows: A pile was formed of printed sheets and hard glazed boards, called fuller-boards, arranged alternately, one on the other. The pile thus formed was placed between the platen and the follower of a suitable press and a powerful pressure applied. The pile being allowed to remain under pressure for several hours. The purpose of the Jones invention appears to be to save this great expenditure of time and to dispense with the use of the fuller-boards. To this end Jones conceived the idea of retaining the pressure communicated by the press to the pile after the pile had been removed from the press. For this purpose he contrived a press in which the pile of printed sheets, made up without fuller-boards, might be placed a stiff board of substantially the same size as the printed sheets, being placed at each end of the pile and the platen and follower of the press being so constructed that cords might be conveniently passed around the package formed of the printed sheets and end boards, and securely tied while the pile was still in the press. A package was thus formed which, when removed from the press, would

retain the printed sheets under pressure any length of time desired and leave the press free for use in forming other packages. In his drawings and specification Jones illustrates two forms of press. One a vertical press, having a follower which is actuated by a series of lever- and used for the purpose of smoothing out or straightening folded sheets, forming book signatures, so that they might be conveniently piled and occupy but a small space, and this press is used simply to prepare matter for the other press, and is not claimed as any part of his patented invention. The press in which the
146 packages are formed consists of a trough-like structure formed of two boards or plates secured together to form a right angle and supported by standards, with the open side of the trough upwards, one of the standards being shorter than the other, so that the bed occupies the position slightly inclined from the horizontal. Near the end of this trough-like structure are rigidly secured a pair of rectangular blocks. One of these blocks serves as a foot or platen of the press; the other one serves as a nut for the pressure screw. Attached to the pressure screw by a swivel connection is a rectangular follower which is guided by the sides of the press and is adapted to be moved along the press bed by the screw. The opposed faces of the platen and the follower are each provided with a pair of straight open ways, crossing each other at right angles and intercepting at points substantially in line with the axis of the pressure screw. The two sides of the press bed are provided each with a longitudinal slot which registers with one of these ways in the follower and the platen, the whole construction being such that a package contained under pressure between the follower and the platen may be bound by cords passing through the open ways and the slotted sides of the press. The intention is that the binding cords shall cross each other centrally of the end boards of the package, and the inventor explains that "when large work is being pressed and tied, no special adjustment of the press is needed to locate the work centrally, as described; but when intermediate and small-sized work is operated on, it is kept properly distanced from the press sides, H, H^2, either by removable ledges, 1, lodged in grooves in said sides H and H^2, as shown, or by sliding adjustable rods, *m*, removably attached to the plunger divisions, D′ at *v*, and allowed to pass freely through the parts F, B^2 and K."

Of the claims which you have mentioned in your question, Nos. 1, 2 and 4 relate to the construction of the press and claim 5 relates to the process for treating the folded sheets. Claim 1 includes simply the particular construction of the platen and follower termed "the compressing heads," whereby they are adapted to permit the insertion of the binding cord while the package is under pressure. The second claim includes, in addition to the construction of the compression heads, the particular form of the press bed. Claim 4 is for the combination with the press bed of two alternative forms of guides for centering the sheets in the press. Claim 5 is in the following words:

"The process herein described for treating folded printed sheets of paper in dry-pressing, the same consisting of subjecting a collec-

tion of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles with end boards, then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete dry-pressing."

In determining what was new in this process at the time the Jones application was filed, it will be interesting to know methods before practiced in this particular art in the art of bookbinding.

As pertinent to this subject, I quote from a book published
147 in 1856 by Henry G. Baird, entitled "A Manual of the Art of Bookbinding," by James B. Nicholson. I quote first from page 41, under the title "Beating, pressing, &c.":

"The operation is commenced by shaking the volume upon a stone by the back and head, so as to make the whole even and to facilitate the division of it into as many equal parts, which are called searching or beatings, as may be judged necessary according to the fitness and other circumstances. A section is then taken and well beaten over, drawing it in the hand towards the body so as to bring the various parts successfully under the hammer, and carefully avoiding striking more blows in one part than in the other, except giving the edges a slight extra tap round."

Quoting again from page 43, in the same book:

"A rolling machine has been invented as a substitute for the beating which books require previous to being bound. The book is divided into parts, according to the thickness of the book; each part is then placed between tins, or pieces of silver; the rollers are then put in motion and the part passed through. This is repeated until the requisite degree of solidity is obtained."

Again quoting from page 44:

"A powerful embossing press, technically called a smasher, has lately been employed to great advantage. A book is placed between tins, a platen is adjusted to a proper height, and a large fly-wheel set in motion. The platen descends in a perpendicular manner; then, upon its ascending, by means of a small hammer the distance between the platens is decreased; the wheel still continuing in motion, the book, upon the descent of the platen, is compressed more forcibly than at first. The operation is repeated until the book has experienced the whole power of the press. It has been calculated that by this process a single volume will, if necessary, undergo a pressure equal to a weight of from 50 to 80 tons."

Page 45:

"In some binderies a hydraulic press is relied upon for compressing the sheets, without their undergoing the beating or rolling process. For publishers' work it has been found to answer every purpose for which it is employed, as the press can be filled out by placing books in layers of from one to four or eight, according to their size, between iron plates; and the immense power of the press is thus evenly distributed through a large quantity of sheets at the same time."

Again I quote from a book entitled "The English Cyclopædia, Arts and Sciences," volume 2, published in London, by Bradbury

and Evans, in 1859. On page 267, under "Bookbinding," in the left-hand section of the page, near the top, I find the following statement:

"If the sheets thus folded, gather- and collated, are to be put into boards, they are sewn in the next process; but if they are to be bound, and therefore finished in a more careful manner, they are beaten or pressed before being sewn, as a means of bringing them to a more compact and smooth state. Until a recent period this process used to be affected by means of the hammer—the volume being divided into parcels of a few sheets; and these parcels,
148 held flat on a smooth stone, being beaten with a heavy hammer. But the rolling press has greatly improved the mode of proceeding. This press consists of two smooth steel rollers, rotating nearly in contact; the parcels of the volume are placed between tin plates and then passed between the rollers, the action of which gives them a more effective and expeditious pressure than the hammer. Sometimes, however, the ink becomes transferred to the opposite page by this process, when not properly conducted—to the great disfigurement of the book."

It is evident from these quotations that it was a matter of common knowledge and practice in the art of bookbinding, at the time of filing the Jones application, to subject an assemblage of printed sheets forming a pile, without the use of fuller-boards, to heavy pressure for the purpose of solidifying and smoothing them. It is also evident that when a package of printed sheets forming a pile of book signatures was to be subjected to pressure, that the placing of rigid boards or plates at the ends of the pile would operate to evenly distribute the pressure over the surface of the sheets. It is evident therefore that we must look for the novelty of this process to that step in the process which consists in "tying them (the collection of sheets) into compact bundles * * * then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete dry-pressing."

As bearing upon this phase of the subject, I will refer to the following U. S. patents, copies of which have been placed in my hands as exhibits in this case.

No. 2113, issued May 29, 1841, to Thomas G. Hardesty, for improvement in tobacco presses.

No. 9324, issued October 12, 1852, to Daniel Kellogg, for improvement in presses for binding flocculent and other substances.

No. 40336, issued October 20, 1863, to William R. Dingman, for improvement in paper presses.

No. 48523, issued July 4, 1865, to Oliver P. Craig, for improvement in baling presses.

No. 58779, issued October 16, 1866, to Solon Cooley, for improvement in wool presses.

No. 119,195, issued September 19, 1871, to Thomas Stibbs for improvement in presses for pressing yarn, &c.

No. 125,786, issued April 16, 1872, to Charles Brown for improvement in baling short-cut hay or straw.

No. 169,518, issued November 2, 1875, to Charles Brown for improvement in baling short-cut hay.

No. 181,389, issued August 27, 1876, to James B. Archer for improvement in baling manure and other substances.

Of these patents No. 181,389 shows a bale formed supposedly of a mass of stale manure confined between two light frames formed as follows:

"The two frames are each composed of side pieces A, A, and end pieces B, B, consisting of wooden slabs, the said side pieces being of a length equal to the length of the bale, and the said end pieces being of a length equal to the width of the bale. These side
149 and end pieces are nailed or otherwise secured together at the ends to form the frames, which are thus made of a size and form to cover the edges of the two opposite sides of the bale to which they are tied. * * * The frames A, B having been made, the bale is formed in a baling press of suitable size by first placing one of the frames on the bottom of the box of the press, then filling in upon it the requisite quantity of the material to be baled, afterward putting on the top frame, and then subjecting the contents of the bale between the frames to a suitable pressure. The bands having been applied at a suitable stage in the operation, have their ends fastened while the bale is subject to pressure, and after they have been fastened the box of the press is opened and the bale turned out."

Substituting for the material mentioned in this patent as forming the bale, folded printed sheets of paper, we have the entire process of Jones as claimed in claim 5. The steps are taken in the same order and would, in my opinion, produce the same result.

In patent No. 169,518, a bale somewhat similar to the last-described bale is shown, the difference being in the particular construction of the end boards or frames. The process is the same. One of the end frames is laid in the press, the material is then filled in above it and the other end board is put on top.

"Pressure is then applied to the mass thus bound and protected, and when sufficiently compacted, bands, cords, ropes, or wires, D D, are passed and fastened around the compressed mass of short-cut hay or straw, with or without feed, and around the sticks or binders, A, A^1, and slats C, C^1, to retain the bale in its compact form.

In patent No. 125,786, we have illustrated another example of a bale formed between end boards and bound while under pressure. In this case the form of the bale is cylindrical with plain ends. I quote from the specification:

"To press the short-cut hay or straw, A, into the form of a hollow cylinder, as shown, said material may be suitably piled or packed in a box of cylindrical shape, open at its ends, and resting on a grooved base for passage of the binding ropes, cords, or wires, said base also carrying a mandril for forming the passage *b* in or through the bale and the follower of the press, which works within the box, being grooved like the base, also made hollow to receive the mandril through it. The box itself should be made to open down its side, either by means of hinges or otherwise, so that when opened

it may be removed, whereby the bale is left wholly exposed at its sides for the convenience of hooping or binding it, the hoops, ropes, or wires, *c c*, being passed through grooves in the base and follower in planes parallel with the axis of the base, and over segmental wooden strips, *d d*, arranged to lie one upon the other, so as to brace the ends of the bale without impairing the ventilation."

Adjourned to Friday, June 14, 1895, at 10 o'clock a. m.

150 Met, pursuant to adjournment, Friday, June 14, 1895.
Present: Same parties as before.

Witness continues his answer:

The examination of these three last-mentioned patents makes it evident that the idea of tying a package protected by end boards while under pressure was not first discovered by Mr. Jones. It seems to me the process claimed in claim 5 is without an element of patentable novelty. Neither of these patents just mentioned show any machine for communicating the pressure to the bale, but they all imply such a construction of the press as renders the tying of the bale possible while under pressure. Examining further into the state of the art, we find shown in patent No. 119,195 a press for forming yarn into packages. This press consists essentially of a base having a series of grooves across its upper surface, a pair of vertical sides rising from the opposite edges of the base and provided with open slots which register with the grooves in the base, brackets extending from these vertical sides to form a support for a plate carrying a pressure screw to which a follower is attached by a swivel joint and the under face of this follower is provided with a series of grooves corresponding with the grooves in the base. The plate carrying the pressure screw and its follower is arranged to slide upon its support and upon the upper edges of the vertical sides of the press, so that the follower may be brought into position over the base or may be pushed to one side so as to leave the top of the press open. In forming the packages, the tie-ropes are first passed through the grooves in the base and the material is then piled into the press, the vertical sides of the press forming guides for the orderly arrangement of the material. The follower is then brought into position and the mass is compressed, after which the free ends of the binding cords are passed through the vertical slots, through the grooves in the follower and is then tied while the package is under pressure. Packages like those formed in the press shown in the Jones patent might be easily and conveniently formed in this press, the only difference being that the cords would pass about the package in one direction only.

In patent No. 58779 is shown a press for making wool fleeces into compact packages. The press consists essentially of a bottom board or base to the sides of which are hinged side and end pieces arranged in such a manner that they may be opened out into the same plane with the bottom board, or may be raised vertically to form therewith a square box, open at the top. A follower adapted to fit loosely into the box thus formed is provided with dogs which engage ratchet

bars, which are secured to the sides, so that the follower when pushed down, is retained in position. The opposed faces of the bottom board and the follower are each provided with two series of grooves crossing each other at right angles, and registering with vertical slots formed in the sides of the press. These grooves, which are formed in the bottom board and in the follower, form intersecting open ways for the passage of the binding cord, and they each open into an enlarged space immediately back of the groove,
151 which permits the easy introduction of the binding cord. They are in this respect the complete counterpart of the crossways L^2, L^3, of the Jones patent. In using this press, after the material has been compressed, the cords are drawn through the grooves in the bottom boards of the press, and are then passed about the package in opposite directions, and tied while the package is still under pressure, thus forming the package bound with cords in the same manner as the package shown in the Jones patent.

Patent No. 48523 shows a press in which the baling box is raised to a vertical position for filling, and is then put in a horizontal position for the process of pressing. The baling box is provided on opposite sides with removable doors, and the manner of baling is as follows: A pair of slats are provided of about the size of the interior diameter of the press, having grooves upon one face for the insertion of binding hoops, and grooves upon the opposite face for the insertion of binding clamps, there being one at each end of the slats. The manner of forming the bale in this press is as follows: I quote from the specification:

"Before the commencing of the pressing the upper and outer slab, K^1, is inserted, so that the bale is confined on opposite sides by slabs corresponding in area to the length and breadth of the bale, which slabs intervening between the clamp bars and the hay confine the latter to its proper shape and dimensions for hooping. Grooves *k* in the inner faces of the slabs K, K^1, enable the insertion of the hoops after the removal of the clamped hay from the press."

The binding clamps consists of a pair of straight bars each pivoted at one end to a short connecting bar and provided at the other end with tenons which enter mortises in another connecting bar of similar length. In using the clamp, the mortised connecting bar is removed, and the clamp is applied to the package formed of the material pressed, and the end boards or slabs K and K^1, while the package is under pressure, so that a package may be retained under pressure after its removal from the press.

In patent No. 9334 there is shown a vertical press in which the lower platen is pivoted to the frame, so as to turn in a horizontal plane, the upper face of the platen is grooved transversely and longitudinally for the passage of binding cords. A rectangular pressing box open at both ends, and having in its vertical walls longitudinal slots, which register with the grooves in the platen, is mounted on the lower platen and serves as a guide in placing the material to be pressed. An upper platen or follower is pivoted at the lower end of the vertically moving rack-bar, so as to register with the lower platen and the press box. The under face of the

said follower is grooved to correspond with the platen. The material being placed in the press box is compressed between the platens, cords are passed through the slots in the sides of the press box and along the grooves in the platens, and are tied around the compressed package while it is under pressure, the cords crossing each other at right angles. End boards and folded printed sheets being
152 placed in the press box and subjected to pressure, and tied as described, the resulting package would be a duplicate of that shown and described in the Jones patent.

In patent No. 40236 to Dingman, there is shown a press for pressing and tying paper. The lower platen consists of a series of plates of metal arranged in the same horizontal plane, and supported upon a series of standards or pedestals, which rise from a common support, the arrangement being such that there is a space between the edges of adjacent plates. The follower or upper platen consists of a similar series of metallic plates which are attached to rods, which rise from a sliding frame common to all, the arrangement being such that the plates forming the upper platen are arranged opposite those of the lower platen, and have similar spaces between their edges. In operating this press, the loose paper in sheets or bundles as it comes from the machine is deposited on the lower section of the bed plate, resting on all the sections. Pressure is then applied to the bundle of sheets by bringing the upper platen down upon the package. Cords are then passed around the package in the spaces between the sections forming the platens, such spaces forming open ways for the passage of the cord to which free access may be had from all sides. After the cords have been secured, the package of tied sheets is removed from the press. The inventor says, in relation to the object of his invention:

"The process of pressing and tying paper now generally employed requires a large and somewhat expensive press, which is located in some corner of the finishing-room, and as the paper comes from the machine it is carried to the finishing table, there counted and folded, and when sufficient is obtained to fill the press, it is conveyed to the press and placed therein, and pressed for about twelve hours, or during a night. It is then removed and conveyed to the tie-table and there tied into reams. * * * This operation is laborious and tedious, occupies much time, requires strong twine, and unavoidably draws the ream away or the paper out of place. The following, on the other hand, are some of the advantages I claim for my press and my mode of tying: 'It effects a great saving of time and labor.' 'The paper is pressed uniform in thickness.'"

We have in this press another example of open ways to which free access may be had, formed in the "compressing heads" for the purpose of permitting of the tying of the package while under pressure.

In patent No. 2113 there is shown a trough-shaped horizontal press box, having open or longitudinally slotted sides, which serve to hold in proper alignment the material to be pressed. The press consists of two end pieces or standards which are connected by longitudinal strips or bars arranged in pairs in two sets, one above

the other, the lower set of parallel bars being nearer together than the upper set, thus forming suitable guides to hold in alignment the series of cylindrical receptacles, and a hogshead into which the material is forced from the cylindrical receptacles by followers which are arranged to traverse the trough-like press bed.

153 In view of the state of the art, as illustrated by the above-described patents, I think that at the time the Jones application was filed there was no patentable invention in the combinations claimed in claims 1 and 2 of the Jones patent. The cross-ways L^3 and L^3 of claim 1 are found in Kellogg No. 9324, in Cooley No. 58779, similar ways extending across the follower and the platen in one direction only are found in Craig, in Dingman and in Stibbs. The particular construction of the compressing heads comprising the base portion, the series of pedestals or standards erected on said base portion, and the series of disconnected plates forming the working surface of the head, and arranged with open spaces between them for the passage of the binding cords are found in Dingman, the only difference between the two devices being that in Dingman the plates with their standards are arranged to form a series of successive open ways, and in Jones the same parts are arranged to form intersecting open ways. Claim 2 includes, in addition to the elements of claim 1, the press bed inclined and provided with longitudinal slots in its sides. We have in the patent to Hardesty the open horizontal trough-shaped press bed, with longitudinal slots or spaces in its sides. I do not think it involved invention to incline the press bed, especially in view of the fact that inclined trough-shaped beds or receptacles, arranged to receive and hold in regular order a series of folded sheets, was a common construction found in folding machines for folding printed sheets.

With regard to claim 4, the device of a set of removable ledges or a set of adjustable guide-boxes for centering the sheets does not appear to be found in any of the exhibits. It appears to me, however, that it is not clear from the claim which device is to be used, the claim being for an alternative construction.

Q. 4. Will you please examine the sketch which I now hand you, marked "Respondent's Exhibit Sketch of Palmer Press," and the testimony of the witnesses Schrank, McKee, and Davis, describing the machine from which this sketch was made and the means of operating it, your attention being particularly called to answer to questions 22 and 40 of Schrank, and compare the device represented by said sketch with the device shown, described, and particularly referred to in claims 1, 2, and 4 of the Jones patent in suit, and also state how the process of pressing and tying bundles upon this press as described by the witnesses compares with or varies from the process set forth in claim 5 of the Jones patent.

A. The device illustrated in the sketch "Palmer's press," referred to in your question, consists of a rectangular frame carrying upon one of its cross-bars a block secured centrally to the cross-bar and provided with a pair of intersecting open grooves in its upper surface. The other cross-bar carries a nut in which is mounted a screw-threaded plunger, — the lower end of which — attached a second

grooved block corresponding in size with the block first described, the whole forming a press in which a pile of printed sheets might be compressed and tied in a package while under pressure by cords crossing each other at the centers of the ends of the package. Comparing this device with that shown in the Jones patent contained in claims 1, 2, and 4, the grooved blocks of the device shown
154 in the sketch correspond with the compressing heads constructed with cross-ways in claims 1 and 2, and the process used in connection with the press shown in the Palmer sketch and described by the witness Schrank in his answer to question 22 is the same process as that described in claim 5 in the Jones patent. I do not find anything in the device shown in the sketch which corresponds to the combination called for in claim 4.

Q. 6. Please examine the wood cut "Complainants' Exhibit Wood Cut of Seybold's Signature Press," and state if you understand the construction and operation of the machine of which that is a perspective view.

A. I have examined the exhibit which you mention in your question and I understand from the cut there shown the general construction and manner of operation of the machine illustrated.

Q. 7. Compare the machine illustrated by this wood cut with the Jones patent, referring particularly to claims 1, 2, 4 and 5, and state wherein you find the elements of the said claims and the elements of the machine referred to to correspond or differ the one from the other. And also wherein the elements of the Jones patent and of the structure represented by the wood cut compare with or differ from the preceding state of the art as illustrated in the patent you have heretofore referred to, and in Respondent's Exhibit Sketch of Palmer Press.

A. The machine illustrated in the cut before me consists essentially of a pair of uprights carrying three guide-rods extending at an angle therefrom and forming inclined ways on which are mounted a fixed head or platen. It is, however, adjustably secured in position upon the rod and a corresponding movable head arranged to traverse the rod or ways. The removable head is actuated by a pair of toggle-jointed levers which are pivoted to arms projecting from the head and from one of the uprights in which the rods are supported. The toggle levers are connected by a link with a nut which is mounted upon and arranged to traverse a screw-threaded shaft which is mounted in bearings in the uprights. The mechanism is provided apparently for driving the screw-threaded shaft in opposite directions, the details of which do not appear in the cut. The fixed head and removable head or follower are provided in their opposed faces with open cross-ways through which cords might be passed. These cross-ways open into a cylindrical enlarged passageway formed in the body of the head, and similar in appearance to those found in the compressing heads of the Cooley patent No. 58779, which I have before referred to. A pair of light rods appear in the cut as connecting the two heads, one of which shows a series of small openings adapted to receive the rods and would indicate that the rods were adjustably in position and were

for the purpose of supporting the signatures when placed between the heads. This machine is similar to that shown in Jones' patent in that it shows an inclined trough-like press bed, upon which are mounted a fixed head and a movable head, in which are formed open cross-ways communicating with a large opening formed in the heads beneath it. There are also found in the machine illustrated in the cut the adjustable rods for supporting the signatures in a centered position relative to the cross-ways. The points of difference between the device illustrated in the cut and that shown in the Jones patent are:

1st. The press bed or ways which the movable head traverses is formed of rods instead of planks, as in the Jones device; the compressing heads instead of being built up of a series of blocks and connecting standards are apparently formed in one piece. The movable head, instead of being directly actuated by the screw, is actuated by the straightening of the toggle lever above described. Comparing the device shown in the cut with the claims of the Jones patent, I find compressing heads which answer the same purpose as the compressing heads called for in the claim and they are provided with the cross-ways, centrally arranged through them. Referring to claim 2, I find the inclined press bed provided with longitudinal openings in its sides and the press heads having through them cross-ways correspondingly arranged with said slots. Referring to claim 4, I find, in combination with the press bed, of the set of adjustable guideways, but I do not find the set of removable ledges called for in the claim. In relation to claim 5, the press illustrated in the cut appears to be adapted to the carrying out of the process described in said claim. Comparing the machine illustrated in the cut with the previous state of the art, as heretofore described, I find that it has in the opposed faces of the compressing heads open cross-ways for the introduction of binding cords for tying packages in the press, which was a common device well known in this class of machines. I also find a circular enlarged opening formed through the body of the head and communicating with the cross-ways to be an old device illustrated in the patent to Cooley, before mentioned. I also find the open trough-like form of the press bed to be an old device, as shown in the patent to Hardesty, the construction shown in the cut being more like that shown in Hardesty than that shown in Jones' device. The previous state of the art shows the purpose of the construction shown in this class of devices, viz: the adaptation to the tying of packages while under pressure, to be very old.

Defendant's counsel herewith offers in evidence the patents referred to by the witness in his foregoing deposition and requests the officer to appropriately mark the same as respondent's exhibits:

"Hardesty patent, No. 2113, May 29, 1841."
"Kellogg patent, No. 9324, October 12, 1852."
"Dingman patent, No. 40336, October 20, 1863."
"Craig patent, No. 48523, July 4, 1865."
"Cooley patent, No. 58779, October 16, 1866."
"Stibbs patent, No. 119,195, September 19, 1871."

"Brown patent, No. 125,786, April 16, 1872."
"Brown patent, No. 169,518, November 2, 1875."
"Archer patent, No. 181,389, August 27, 1876."

Also the abstracts from the publications "Manual of the
156 Art of Bookbinding" and the English Cyclopædia set forth in the answer herein and quoted by the witness in his testimony.

It is agreed by complainants' counsel that the abstracts printed in the record may be taken as correct abstracts from the works referred to, subject to correction by copies of the works referred to, if request be made for the same prior to the hearing.

Also Patent Office copy of specification and drawing of patent to Hart, No. 334,977, December 25, 1888, which patent was referred to by the witness Jones in his deposition in this case.

Defendant's counsel also gives notice upon the record that he will reserve the right to introduce and use at the hearing any patents referred to in the answer as illustrating the state of the art, and not here introduced in evidence, upon proper notice to the opposite side that he intends to use such evidence.

Adjourned to Saturday, June 15, 1895, at 10 o'clock a. m.

Met, pursuant to adjournment, Saturday, June 15, 1895.
Present: Same parties as before.

Cross-examination by M. W. JACOBS:

X Q. 8. What practical experience, if any, have you had in the art of printing?

A. I have had no experience as a practical printer. Simply have a general knowledge of the subject, as gathered from observation and reading.

X Q. 9. What practical experience, if any, have you in the art of bookbinding?

A. I have none.

X Q. 10. What special means of observation have you had in these arts?

A. My office and workshop were for many years in the same building with a printing office and bookbindery. I have also had some experience in putting into practical shape machinery for folding newspapers as they came from the press.

X Q. 11. In the folding of newspapers, is there any necessity or occasion for dry-pressing or the removal of the type indentations from printed sheets?

A. No, sir.

X Q. 12. Have you ever in practice witnessed the operation of dry-pressing?

A. I have not, that I took any special notice of.

X Q. 13. Your testimony in this case has been based wholly upon the papers which were submitted to you and to which you have referred, and not upon your practical knowledge of either of the arts of printing or bookbinding. Is that correct?

A. It is, except that I have gained some information from other publications not shown in this record.

X Q. 14. Will you please describe the various steps in the process of making a book from the time the copy is placed in the hands of the printer until the completion of the book, stating by whom
157 the various steps are taken and, as far as you can, the technical names of the same.

A. The copy is put in the hands of the compositor or compositors and is set up in type. The types when set up are assembled and locked up in forms containing usually several pages of the work, Papier-maché matrices are then formed upon the type. When these matrice plates of type metal are cast, thus forming stereotyped plates, from which the sheets which are to form the book are printed. In the process of printing, slight indentations are made by the types in the paper, thus causing slight elevations on the opposite side of the printed sheet. After printing, the sheets are folded twice, four or eight times, as the case may be, each of these folded sheets being numbered or lettered in succession as they are to stand in the book. This number or mark — termed a signature, and the same term is also applied to the folded sheet. In the process of bookbinding several book signatures are connected in one package and are taken to the dry press where they are subjected to heavy pressure to remove the impressions and elevations caused by the type and to smooth and solidify the several signatures and sheets. After removal from the dry press the several successive signatures which go to form a single book are arranged in successive order, which operation is termed collating. When thus arranged they are tied together and taken to the sewing table where several cuts are made across the edge of the book which is to form the back. Into the cuts thus made short strips of twine are secured, the ends of such pieces of twine being left projecting a short distance from the sides of the book, which ends are secured to the inner surfaces of the boards, forming the covers of the book. The preparation of the covers and the particular steps taken in their completion and ornamentation, I am unable to describe.

X Q. 15. What do you understand by collating and by whom is it done?

A. Usually, I believe, by girls employed for that purpose. I understand by collating, the arrangement of the several signatures or folded sheets going to form a book in their regular order of sequence.

X Q. 16. What is "gathering"?

A. It is the same process.

X Q. 17. What is dry-pressing and by whom is it done?

A. I don't know that it is done by any special class of employees except those whose duty it is to run the presses. Dry-pressing is the pressing of the dry sheets to smooth and solidify them.

X Q. 18. Prior to the Jones patent was the dry-pressing done by the printer or the bookbinder?

A. By the bookbinder, I think.

X Q. 19. In your answer to question 17, what do you mean by solidifying sheets?

A. Giving them an even and solid appearance and flattening out folded sheets so that they will lie closely together.

X Q. 20. Was that one of the objects of dry-pressing prior to Jones' patent?

158 A. It was, I think.

X Q. 21. How was the dry-pressing done at that time?

A. First by beating with a hammer, then by rolling between rollers and later by pressing into a hydraulic press. I do not mean by this that these are successive steps, used at any time upon one mass of signatures, but that they represent stages in the development of the art.

X Q. 22. How was it done in the hydraulic press?

A. Several books or masses of signatures were piled upon the platen of the press, iron plates being introduced at the ends and at intervals along the pile to evenly distribute the pressure. The plunger of the press was then brought down upon the mass or pile, subjecting it to heavy pressure.

X Q. 23. That operation you understand as dry-pressing, do you?

A. Yes, sir.

X Q. 24. Was that operation intended for the removal of the indentations of the type made in printing?

A. I think that was one of the objects of the operation. It is cited as later development of the art to which the old art or process of beating with a hammer pertained.

X Q. 25. Where, if anywhere, do you find it stated that the operation described by you in your answer to cross-question 22, was intended for the removal of the indentations of the type made in printing?

A. In the book entitled "Manual of Bookbinding," by Nicholson, heretofore referred to in my testimony under the article or heading "Beating and pressing," commencing on page 41, which first describes the operation of beating with a hammer, and then of rolling, and on page 45 it states: "In some binderies a hydraulic press is relied upon for compressing the sheets, without their undergoing the beating or rolling process." The article does not state specifically the entire object of the operation to be the removal of the type impressions, but that, according to my opinion, would be included under the general object stated, namely: "To secure the first great requisite of bookbinding, solidity."

X Q. 26. That operation was conducted in the bookbindery, I believe?

A. I think it was.

X Q. 27. You never saw it done, did you?

A. No, sir.

X Q. 28. Now, as a matter of fact, at the time to which we have been referring, was not the smoothing out of the type indentations, technically termed dry-pressing or smooth-pressing, done by the printer before delivering the sheets to the binder?

A. I do not know.

X Q. 29. Where, if anywhere, do you find it stated that the process of beating with a hammer was used for the purpose of removing type indentations?

A. On page 41 of Nicholson's Manual, from which I have quoted before, which, as I have heretofore stated, does not specifically state the object of the operation to be the removal of the type im-
159 pressions, but the object appears to be the smoothing of the sheets, and the operation described would, in my opinion, result in removing the roughness occasioned by the type indentations.

X Q. 30. Please quote upon the record any passage you may find which at all indicates that the object of the operation was the removal of type indentations.

A. At the foot of page 40, I quote:

"The book, being found correct, will be ready for the beating stone, which, although it has been almost entirely superceded by the introduction of machinery, will always be invaluable to a binder of limited means; and the amateur will find it to be an essential process to secure the first great requisite of good binding, solidity."

"The first operation is commenced by shaking the volume upon the stone by the back and head, so as to make the whole even and facilitate the division of it into as many equal parts, which are called sections or beatings, as may be judged necessary according to the thickness and other circumstances. A section is then taken and well beaten over, drawing it with the hand towards the body, so as to bring the various parts successively under the hammer, and carefully avoiding striking more blows in one part than the other, except giving the edges a slight extra tap round."

As I have before stated, the removal of the type indentations was included in the term "solidity," and would be a necessary result of the operation described.

X Q. 31. Do you mean to say that the beating of perfectly fresh sheets with a hammer would be a practical way of removing type indentations?

A. I do not think it would be so considered at this day.

X Q. 32. Was it at that day?

A. So far as I am informed, it was the best way they had at that day.

X Q. 33. What, in your opinion, would have been the effect upon the opposite page of beating with a hammer to remove type indentations from freshly printed sheets?

A. The effect would be to offset the printing of one sheet upon the other, and the users of this process are especially instructed by the writer to be careful to see that the sheets are dry. I quote page 42: "Before beating a book, care should be taken to observe, if it has been recently printed, for, if so, it would set off by being beaten too much. This will be easily ascertained by referring to the date at the foot of the title, or by smelling the ink it has been printed with, which, being composed partly of oil, will not have got perfectly dry."

X Q. 34. Now, upon further reflection, do you not find this to be the fact, that the passages to which you have referred on your direct examination have relation exclusively to the manipulation of the sheets in the bindery for the purpose of putting them into book form, and have no relation at all to the removal of the type indentations which, at that time, was customarily done by the printer before the sheets were delivered to the binder?

160 A. The passages to which I have referred are undoubtedly for the instruction of the bookbinder, and if it is a fact that the printed sheets came to him with the type indentations removed, then the processes described do not necessarily include removal of the type indentations.

X Q. 35. There is nothing in the passages referred to, so far as you have been able to find, which indicates that the process therein described was intended for the removal of the type indentations, is there?

A. There is no such indication except indirectly, as I have before stated.

X Q. 36. In your answer to question 4 you speak of the trough of the Jones press being slightly inclined from the horizontal. Will you look at the drawing accompanying the patent to him, and having measured the standards A and E with the measure which I now hand you, if you care to do so, say whether you have not rather understated the inclination in describing it as slight.

A. It is possible that "slightly inclined" does not quite express it. The drawing is in perspective, and rather bad perspective at that. By actual measurement of the standards in the drawing, one is nearly three times as long as the other, but to suppose that that represents the inclination of the bed, would be to exaggerate it quite as much as I have slighted it. I should say that the bed in the drawing formed an angle with the horizon of 20 or 25 degrees.

X Q. 37. What is the purpose, as you understand it, of having the bed of the press inclined?

A. To cause the signatures, as placed between the compressing heads, to have a slight inclination towards the foot of the press, so that they will steady while in the press.

X Q. 38. We find the same or substantially the same inclination in the Seybold press, as represented in "Complainants' Exhibit Wood Cut of Seybold Signature Press," do we not?

A. Yes, sir; it is substantially the same. The direction of the inclination is, however reversed. The Seybold press being lowest at the follower end or head of the press.

X Q. 39. What practical difference does that make, if any, in the operation of the machine?

A. No difference of particular importance; in the Jones machine the pile of signatures would remain in place while the follower moved up against it. In the Seybold machine the pile of signatures would lie against the follower and would be moved along with it at the starting of the press.

X Q. 40. In your answer to question 4, in describing the method of removing type indentations by means of fuller-boards under

pressure, you say that the pile was allowed to remain under pressure for several hours. Have you not somewhat understated the time? Was it not the practice to turn out two pressfuls in 24 hours; or, in other words, to allow the sheets to remain under pressure twelve hours on an average?

A. I think it was the practice to allow the signatures to remain under pressure over night, which would presumably be about
161 twelve hours. I meant to express by the term several hours a considerable length of time, but did not think it necessary to state the exact number of hours.

X Q. 41. What was the size of the presses generally used for the fuller-board process of smoothing out indentations?

A. I do not know, and I have no data for determining.

X Q. 42. You never saw the process carried out, did you?

A. No, sir.

X Q. 43. What is a fuller-board?

A. I understand it to be a glazed sheet of hard material and of moderate thickness.

X Q. 44. Of what material and of what thickness?

A. I believe they were usually made of pasteboard or analogous paper material having a hard, smooth surface. As to thickness, I should suppose them to be anywhere from $\frac{1}{20}$ to $\frac{1}{8}$ of an inch thick.

X Q. 45. How many sheets could be put in a press between fuller-boards in this process of smoothing out indentations?

A. I could not tell how many without making a calculation involving the distance between the compressing heads of the press and the thickness of the printed sheets, but I should say that perhaps one-tenth as many printed sheets could be pressed at one time when fuller-boards were used as could be pressed at one time when the fuller-boards were dispensed with.

X Q. 46. Dispensed with in what process or machine?

A. In the same press.

X Q. 47. Prior to the date of the Jones press, were the fuller-boards dispensed with in the process of removing indentations from printed sheets?

A. I think they were. No mention is made of fuller-boards in the printed publications of 1856 and 1859, which I have already referred to, so far as I am aware.

X Q. 48. What kind of a press was the operation there described conducted in?

A. The hydraulic press mentioned in Nicholson's Manual, as illustrated on page 46. It is constructed apparently with metallic head and foot plates which were connected by four metallic pillars or rods, which served as guides for the follower. In the base the pressure cylinder was formed, and into this the piston which depends from the follower was fitted. No dimensions of this press are given.

X Q. 49. Where, if at all, in that publication do you read that fuller-boards were dispensed with in the process of smoothing out type indentations?

A. Nowhere, except by implication, as I have several times ex-

plained. By implication, I mean that in the various processes described no fuller-boards are mentioned, and consequently I infer from that that none were used.

X Q. 50. Neither is the process of smoothing out type indentations there mentioned, is it?

162 A. No, except by implication, as I have several times explained.

X Q. 51. As a matter of fact, you do not know whether or not fuller-boards were dispensed with in that process, do you?

A. Certainly not, from personal observation.

X Q. 52. And your entire knowledge on that subject is derived from the printed publications to which you have referred, is it?

A. It is.

X Q. 53. In your answer to question 4, you speak of the use by Jones of "a stiff board of substantially the same size as the printed sheets." That board was not only stiff but rigid, was it not, according to his specification?

A. It was. I supposed the terms stiff and rigid to be substantially synonymous.

X Q. 54. What, as you understand it, was the function of that rigid board in the Jones patent?

A. It is to distribute the pressure over the whole area of the ends of the package, and also to prevent cutting or marring the pages with the twine used in binding or tying the package.

X Q. 55. Of the various patents to which you have referred on your direct examination, and which have been offered in evidence, which do you consider to be the best reference for the first claim of the Jones patent here in suit?

A. Dingman, taken in connection with Cooley.

X Q. 56. Please explain what you mean by your last answer.

A. I mean that the patent to Dingman shows a platen or pressing head which is constructed in three parts, viz: the cross-beam, I; the series of metallic standards, 1; and the series of metallic plates, J, which are mounted upon said standards in such a manner as to leave open ways between them for the passage of the binding twine. Of these parts, the beam, I, corresponds to the block, B^2, of the Jones press; the standards, 11, correspond to the standards, F', and the plates J correspond to the blocks or plates F. The other compressing head, containing the parts C, D and D' of the claim, is but a duplication of the parts just described, and the spaces between the plates J correspond to the cross-ways L^2 of the claim, only they are differently arranged, being arranged in a series so that the package when pressed can be tied in one direction only, while in the Jones patent the ways are arranged to cross each other so that the package can be tied in both directions. This particular arrangement of open ways for the passage of the binding cord is found in the platen and follower of the press shown in the patent to Cooley.

X Q. 57. Which do you consider the best reference for the second claim?

A. The patents to Dingman and Cooley, before cited, taken in con-

nection with the patent to Hardesty. In claim 2, the additional elements to those of claim 1, are the inclined press bed, H H^2, provided with longitudinal slots H^1, in its side. The horizontal trough-like press bed, having longitudinal slots in its side, is found
163 in Hardesty. Longitudinal slots in the press bed arranged to register with the open ways of the platen and follower is found in Cooley. There is no invention, in my opinion, in tilting the press bed, so that the material to be packed rests to a greater or less extent upon the platen.

X Q. 58. Which do you consider the best reference for the fourth claim?

A. I do not find any.

X Q. 59. As I understand your deposition, in view of the state of the art, as you understand it, you do not find any invention in the matters claimed in the first, second and fifth claims; is that correct?

A. That is correct.

X Q. 60. In the next to the last paragraph in your answer to question 3, you speak of the series of disconnected plates forming the working surface of the head. What do you understand to be the purpose of those plates erected on standards, as you have described them?

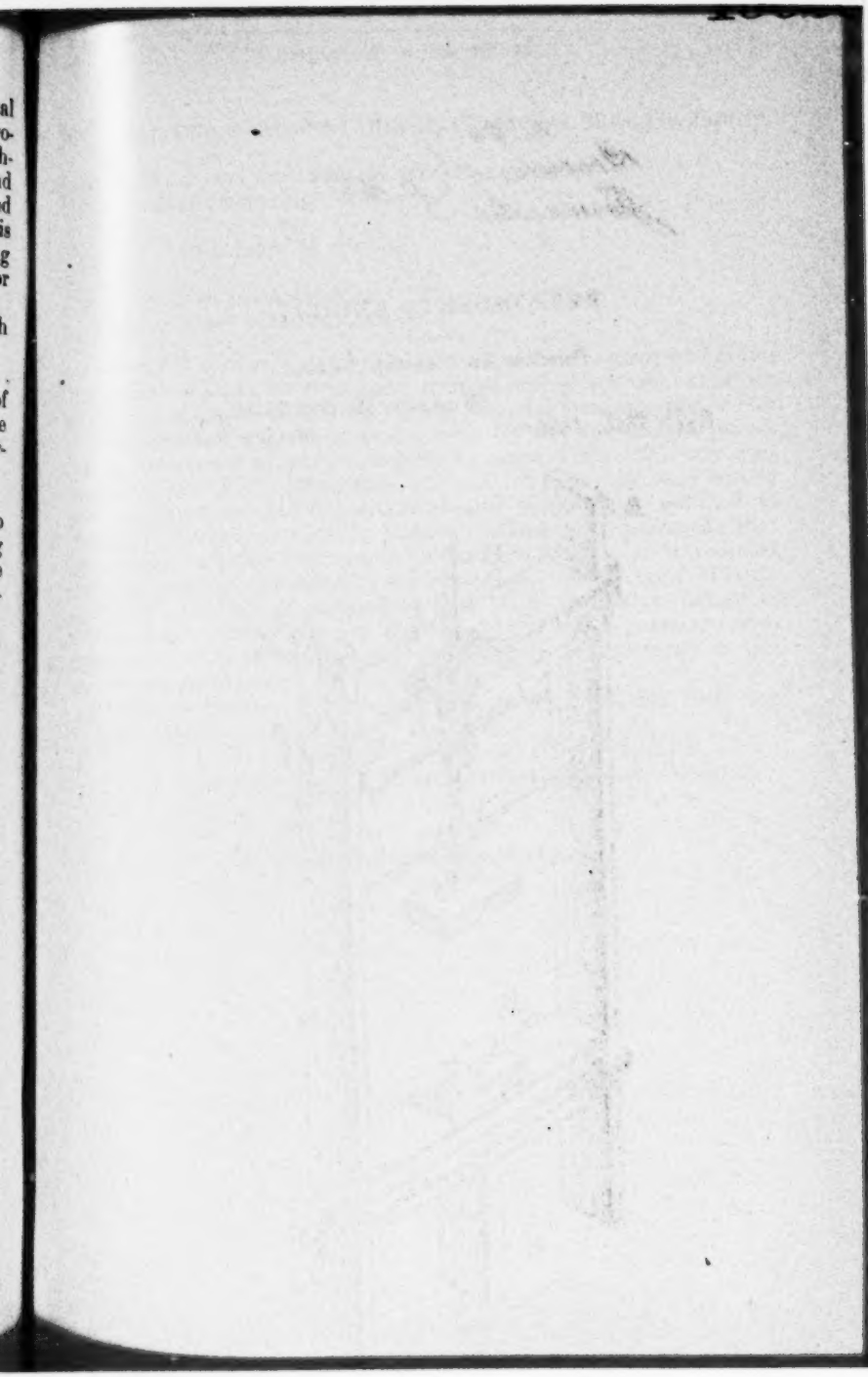
A. To form open ways for the passage of the binding cord, the pedestals being for the purpose of easy access to the ways while tying the package and for the introduction of the binding twine.

X Q. 61. In the concluding sentence of the next to the last paragraph of your answer to question 3, you refer to folding machines having inclined trough-shaped bed. What machines of that character which were in existence at the date of the Jones patent do you have in mind?

A. Such a trough-like structure for the reception of folded sheets is found in the United States patent No. 186,309. I have no memoranda of the date of this patent, but its number shows it to have been issued a considerable time previous to the filing of the Jones application. The drawings in this patent show a pair of open trough-like boxes inclined at opposite angles and arranged to receive the folded sheets as they come from the machine. The folded sheets standing on edge are brought into orderly arrangement to form a package by the sides of the box. Similar trough-like structures for the same purpose are found in U. S. patents No. 147,052, 141,490, 141,486. In these cases, however, I believe the trough is not inclined, but lies horizontal.

HARRISON P. HOOD.

Defendant gives notice on the record that the testimony for the defense is closed.



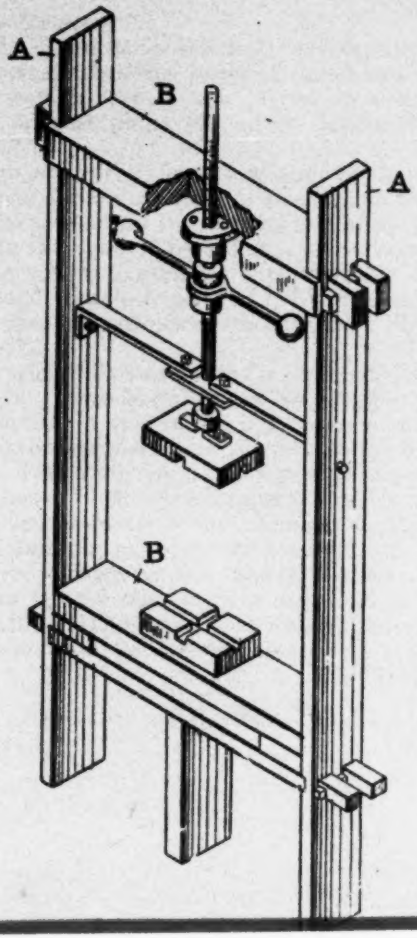
No. 96.
Busch
Journeaux
p. 165

RESPONDENTS EXHIBIT.

SKETCH OF PALMER PRESS.

April 28th, 1895.

WILLIAM M. STEWART,
Notary Public.



164 Supreme Court of the District of Columbia, Sitting in Equity.

JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Company
vs.
CLARENCE M. BUSCH.
} No. 15391, Doc. 36.

UNITED STATES OF AMERICA, *State of Ohio, Hamilton County,* } ss:

I, David S. Oliver, a notary public in and for the county of Hamilton, State of Ohio, by consent of counsel acting special examiner in the above cause, do hereby certify that the foregoing deposition of Harrison P. Hood was taken on behalf of the respondent, pursuant to agreement of parties, beginning June 13th, 1895, and concluding June 15th, 1895; that the said witness was duly sworn and examined and the deposition of said witness was reduced to writing in his presence and by him subscribed in my presence; that the several exhibits referred to in said evidence were introduced into evidence and identified by my signature; that George J. Murray appeared on behalf of respondent and M. W. Jacobs on behalf of complainant-; that I am not connected by blood or marriage with either of said parties nor interested directly or indirectly in the matter in controversy.

In witness whereof, I have hereunto set my hand this 15th day of June, 1895.

DAVID S. OLIVER,
Notary Public, Hamilton County, O.

(Here follows diagram marked p. 165.)

167 DANIEL KELLOGG.

Improvement in Presses for Bundling Flocculent and Other Substances.

Specification forming part of Letters Patent No. 9324, dated Oct. 12, 1852.

To all whom it may concern:

Be it known that I, Daniel Kellogg of Pittsfield in the county of Washtenaw and State of Michigan, have invented certain new and useful improvements in presses for bundling flocculent and other substances, of which the following is a full, clear and exact description, reference being had to the accompanying drawings—

(Here follows diagram marked p. 166.)

which form part of this specification and in which, figure 1 is a view in perspective of the press and other devices or arrangements connected with it; figure 2, a vertical section of the same; figure 3, a view in perspective of a fleece pressed and bundled; figure 4 an interior face view of the pressing bed, detached.

My invention consists of a peculiar construction and arrangement of the press box, bed and platen, whereby the substance being pressed, may be single and double or cross-bound while under pressure.

The framing A of the press may be constructed in any suitable manner and various mechanical arrangements adopted for operating the platen C which, as represented in the drawings, is made to fall and rise by a rack D operated by a spiral worm-wheel F turned through a handle *p*.

The platen C is so attached to the rack D that it is capable of being turned or revolved horizontally and of being disconnected when required to attach a different platen, that represented in the drawings being designed for pressing fleeces of wool, for which purpose the pressing box E and bed B are also adapted, the construction and arrangement of these latter parts being as follows,—the pressing box E is square and made with vertical slots *e* through either side; it sits loosely on a plate *f* to which is secured the bed B that projects slightly within the pressing box; the bed B or its plate *f* is so connected by a swivel, with the cross-tie of the frame that, together with the pressing box, it is capable of being turned or revolved horizontally similar to the specified capability of the platen to turn by its connection, through a swivel, with the rack D; both the under face of the platen and top surface of the bed have channels or creases *a* cut in them corresponding as regards situation and direction, to lines drawn through the slots *e* of the opposite sides of the pressing box. The fleece to be pressed is put into the box E (situate as in figures 1 and 2) the platen in producing the pressure descending within the said box. The fleece, thus pressed by the descent of the platen, is then bound, while under pressure, by passing a needle and cord

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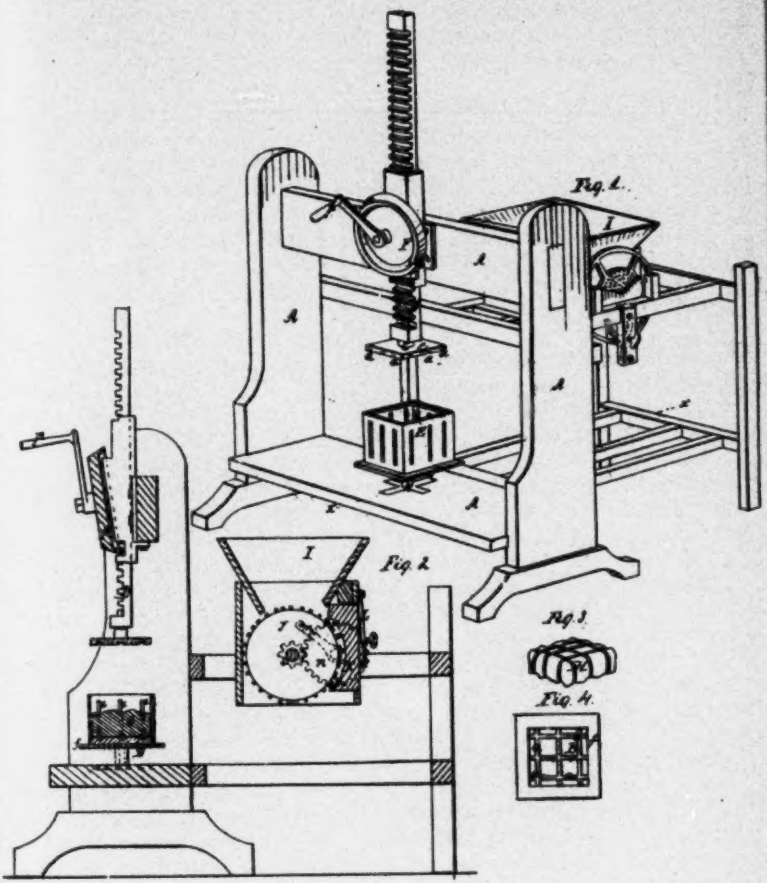
Busch
Jones et al.
} p 166

D. Kellogg,

Wool Press,

No 9,324, Patented Oct. 12, 1852.



168 through each pair of opposite slots *e* in the box and through the corresponding creases *a* of the platen and of the bed, and knotting or looping the cord. The fleece being thus bound in one direction, that is by a series of cords passing along the several creases *a* which are parallel or form channels connecting the slots *e* in the opposite sides of the box,—the pressing box, fleece, platen and bed are then turned partly round and the fleece is bound by a second series of cords at right angles to the first, by simply passing the needle and cord and knotting the latter successively through the slots of the other two opposite sides of the box and along the corresponding channels in the bed and platen. Thus the fleece is bundled as represented in figure 3, it being both single and double and cross-bound, and as this is done while the fleece is under pressure, the fleece will be formed into such compact bundles as to greatly facilitate their transportation to market.

The turning horizontally of the pressing box and platen while the fleece is under pressure greatly facilitates the operation of binding, as the fleece can be bound with equal ease in both directions. It has been before stated that the pressing box E, though of square shape may be of any other desired form,—say a parallelogram so as to give length and breadth to the bundle, according to the substance to be pressed,—any alteration in the shape of the box involves a corresponding one in the bed and platen. The slots in the box and channels in the bed and platen may be arranged so as to cross the cords in other directions than at right angles.

For pressing fleeces this press will be of great utility to the farmer, but to extend its usefulness to him, it is proposed to vary its application, by making it a cheese or general press. For pressing cheese, the platen C, box E and bed B are removed, a suitable round platen attached to the rack D, the cheese laid in its cloth, the perforated tub, and the whey pan, then put on the lower tie-timber of the press which forms a bed, the platen brought down to the necessary pressure and retained for the required length of time to discharge the whey, by affixing a weighted lever to the shaft of the wheel F. It is further proposed, for the increased convenience of the farmer, to attach an apple or other grinding mill at the back of the press, I being the feed-hopper, J the rotary toothed grinder, K the toothed concave set up to its required proximity with the grinder by a screw *l* and spring L; *m*, the handle for revolving the grinder by pinions *n* and *o*; a platform extends under the mill from, and on the same level as, the lower cross-tie forming the bed of the press.

In grinding apples for the production of cider, a perforated tub covered by a loose cloth and resting in a cider vat is placed on the platform to catch the pomace and juice as they fall from the mill, the ends of the cloth are then thrown over the pomace in the perforated tub which, by sliding the vat that carries it, forward, is brought under the platen of the press that serves to squeeze the pomace for the extraction of the juice which is forced through the cloth and perforated tub into the receiving vat.

Again, it is proposed for the accommodation of the farmer, to con-

nect, at one side of the mill, a rotary disc corn-sheller,
169 & 170 the said disc being toothed and working in combination with a stationary but adjustable toothed disc set parallel, or at a slight inclination, to the movable disc.

Having thus described my improved press, what I claim as new therein and desire to secure by letters patent, is—The combination of the pressing box made with openings in its sides, with the platen and bed turning on swivels and formed with channels so arranged as to admit of the passage of the needle and cord through the pressing box for the purpose of singly and doubly binding fleeces of wool, or other substances, while under pressure.

In testimony whereof I have hereunto subscribed my name.

DANIEL KELLOGG.

Witnesses:

F. G. FONTAINE.
P. H. WATSON.

W. R. DINGMAN.

PAPER PRESS.

No. 40,336. Patented Oct. 20, 1863.

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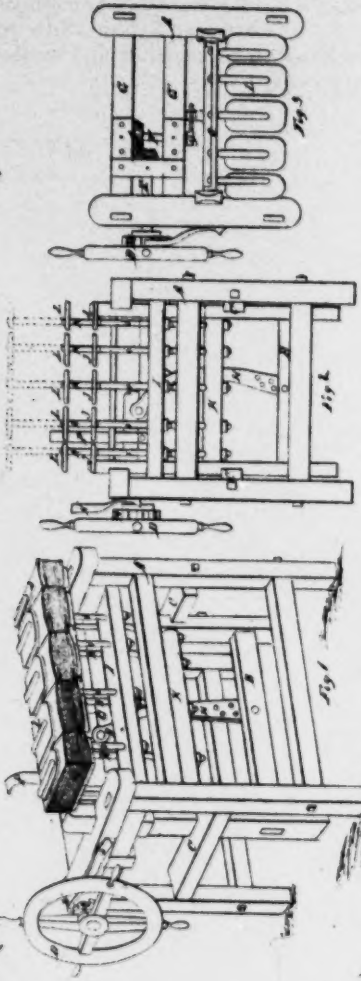
& Fowler
} p 171



Witnesses
Jas. Southworth
H. Dappen

Inventor
Wm. R. Dingman

172 UNITED STATES PATENT OFFICE.

WM. R. DINGMAN, of Stuyvesant, New York.

Improvement in Paper-presses.

Specification forming part of Letters Patent No. 40336, dated October 20, 1863; antedated October 11, 1863.

To all whom it may concern:

Be it known that I, Wm. R. Dingman, of the town of Stuyvesant, in the county of Columbia and State of New York, have invented a new and useful machine for combining and facilitating the operations of pressing and tying paper into reams or bundles, which I call the "combination paper-press and tying-engine," and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

(Here follows diagram marked p. 171.)

Figure 1 is a perspective view; Fig. 2, a front elevation, and Fig. 3 a plan or bird's-eye view.

Letter A is the frame of the press; B, the vertical sliding frame; C C, guide beams; D, hand or capstan wheel; E, hand-wheel shaft; F, crank-shaft at right angles to E; G G′, cross-beams supporting the bevel-gear; H, connecting-rod or pitman; I, cross-beam secured to frame A for supporting the lower jaws or bed-plates of the press; J J J J J, metallic plates or jaws forming lower part or bed of the press; K, cross-bar secured to the sliding frame B, and provided with journals at each end; L L L L L, plates or jaws supported by the metallic rods *k k k k k*, forming the upper or active part of the press; M, ratchet-wheel secured to hand-wheel shaft; N, pawl to hold the press while the paper is being tied; O, yoke-bar; P, spring to operate yoke-bar; *e*, bevel-pinion on end of shaft E; *f*, bevel-gear wheel on end of crank-shaft F, worked by pinion *e*; *g*, crank secured to end of crank-shaft F, and connected with and operating the sliding frame B by means of the connecting-rod H; *i i i i i*, metallic standards supported by cross-beam I; *k k k k k*, metallic standards supported by cross-bar K in sliding frame B.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The frame A may be made of hard wood or metal of any required dimensions. For common straw wrapping-paper I use one which is three feet long by two feet wide and three feet in height. These proportions as also the size of the press, may be varied, as required.

Within the frame A is placed the transverse sliding frame B, of such breadth as to slide easily up and down in the guide-beams C C. This sliding frame is operated by the hand-wheel D. I will

here suggest that this hand-wheel may be omitted and a pulley and belt be substituted, to be operated by the motive power of the mill. Hand-wheel D and ratchet M are secured to shaft E. This shaft revolves in bearings attached to the frame A, and has the bevel-pinion *e*, secured to its opposite end. This pinion gears into bevel-wheel *f*, attached to the end of shaft F, which latter revolves in bearings secured to frame A and at right angles to shaft E.

To the end of shaft F is secured the crank *g*, by means of which and the connecting-bar H, the sliding frame B is operated. This connecting-bar is adjustable, its length being varied by having holes at different distances from the crank-pin, through which the bolt connecting its lower end with the lower cross-beam of the sliding frame may be inserted. On this bolt the connecting rod or bar H is of course movable—can vibrate or revolve freely as the sliding frame moves up and down. At its upper end this connecting-bar is connected with the crank *g* by a bolt on which the latter revolves, forming a toggle or hinge joint. The combined length or angle of connection of crank and connecting-rod may thus be varied to correspond with the degree of pressure required.

To the beam I, which is bolted firmly across the frame A, is secured a series of metallic standards *i i i i i*, supporting metallic plates J J J J J at their upper ends, which form the lower half or bed of the press. To the cross-bar K of the sliding frame B is also secured another series of standards *k k k k k*, which extend up behind and a little above the former, and to which are attached the corresponding plates, L L L L L, forming the upper jaws or active part of the press. These plates are separate, and sufficiently disconnected to allow the string or cord used for tying the paper to pass between.

I would suggest that the operation of this press may be varied by making the pressure upward instead of downward; but I do not think it advisable. The cross-bar K is provided with journals at each end, so as to allow it end-play. The yoke-bar O, which in its ordinary position rests against the standards *k k k k k*, and keeps them upright and in place when it is thrown back against the
173 spring P, allows the standards when elevated to drop back, the bar K rolling on its journals, so as to make the space between the upper and lower jaws larger, if required. When the standards begin to descend with the sliding frame, the yoke-bar comes in contact with the spring P, which throws it over against the standards and forces them back again into their original upright position. The pawl N is employed upon the ratchet-wheel M to hold the press while the paper is being tied. After this it is removed, and, if necessary, is cut into ordinary or single crown-reams. The spring P is secured to the cross-beam G′. (See Fig. 3.)

The operation of my press is evident from the foregoing description of its construction. By means of the hand-wheel D, operating the bevel-gears *e f*, the crank *g*, and the connecting-rod H, the sliding frame B, carrying the rolling-bar K, with the standards *k k k k k* and their several jaws, are elevated. The loose paper, in sheets or bundles as it comes from the machine, is deposited on the lower

jaws or bed of the press. This being done, the hand-wheel is revolved backward toward the operator, causing the jaws L L L L L to descend upon the paper and to compress it to the degree required. The pawl N, being hooked, drops into the ratchets on wheel M and holds the press down until the paper is tied. By a reverse movement of the hand-wheel, the pawl being raised, the pressure is relieved and the paper removed.

The process of pressing and tying paper now generally employed requires a large and somewhat expensive press, which is located in some corner of the finishing-room, and as the paper comes from the machine it is carried to the finishing-table, there counted and folded, and when sufficient is obtained to fill the press (usually about one hundred reams) it is conveyed to the press and placed therein, and, by means of a large screw and follower, pressed for about twelve hours, or during the night. It is then removed and conveyed to the tie-table and there tied into reams. After this (it being, when it comes from the machine, usually double-crown, or double the length of the ordinary ream of wrapping-paper) it is cut into two reams or single-crown. The usual mode of tying paper is by passing a strong cord or twine around the ream, with a noose or loop at the end, through which the other end is passed and then drawn upon with the hand until the loose ream or bundle is sufficiently compressed. This operation is laborious and tedious, occupies much time, requires strong twine, and unavoidably draws the ream away or the paper out of place.

The following, on the other hand, are some of the advantages I claim for my press and my mode of tying:

First. It combines in one machine both the press and the tie-table, and occupies much less space than the old press alone, and can be easily conveyed from place to place, to suit convenience.

Second. It effects a great saving of time and labor, requiring no longer to take the paper from the finishing-table, press, and tie it in this machine than it does to remove it from the ordinary press to the tie-table alone. The tying process with my press, instead of being laborious, is simple and easy, requiring comparatively light cord or twine, and leaves the ream perfectly square.

Third. The paper is pressed uniform in thickness, and no part of the ream can be moved out of its place by the process of tying, since it is held firmly while this is being done.

Fourth. Ordinarily, now, a full press of paper is made before any part of it is pressed. With my machine it can be pressed about as fast as it is made, so that it need not lie loose about the mill and be wasted, as it often is in the ordinary process.

Fifth. Instead of requiring a man, as it does for the old process, effecting comparatively little work, a boy, or even a girl, is sufficient to press and tie with my machine, and does more work and does it better.

What I claim as my invention, and desire to secure by letters patent, is—

1. Constructing and employing a press with a series of jaws or corresponding upper and nether metallic plates, J J J J J and L L

L L L, all disconnected, so that while the paper is being subjected to the required pressure it may be easily tied into reams or bundles.

2. The arrangement of the standards *k k k k k* with their plates L L L L L operating in combination with *i i i i i*, with their respective plates J J J J J, substantially in the manner and for the purpose herein set forth.

3. The combination and arrangement of the several parts and devices employed to operate the sliding frame B, or their equivalents, substantially as and for the purpose herein set forth.

WM. R. DINGMAN.

Witnesses:

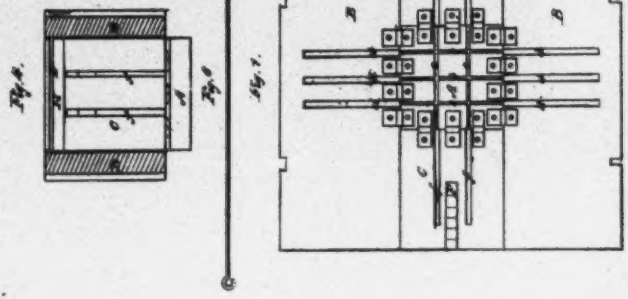
JACOB TEN BROECK.
H. TAPPAN.

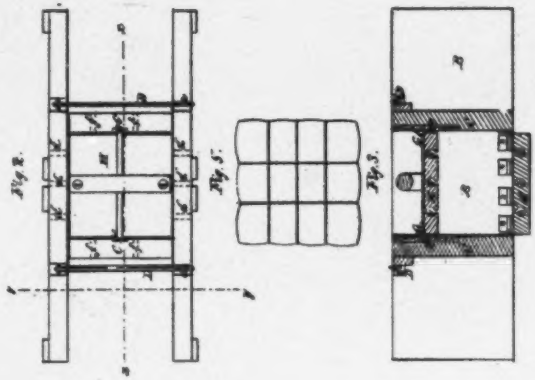
No 96
Cooley
vs
Jones
et al.

S. Cooley,

Wool Press,

No 58,779, Patented Oct. 16, 1866.





Witnesses

Jas. A. Lamb

Inventor

S. Cooley
by Munn & Co
Attorneys

175 UNITED STATES PATENT OFFICE.

SOLON COOLEY, of Oakwood, Michigan.

Improvement in Wool-presses.

Specification forming part of Letters Patent No. 58779, dated October 16, 1866.

To all whom it may concern:

Be it known that I, Solon Cooley, of Oakwood, in the county of Oakwood and State of Michigan, have invented new and useful improvements in wool-presses; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention consists, principally, in a novel construction and arrangement of the press whereby, after the fleece has been pressed therein, it can be securely bound or tied before removing it from the press, and without relieving the pressure upon it; also in the use, in combination with the sides of the press-box, of a follower of such a construction and arrangement that it will hold itself at any degree of depression to which, by means of weight, it may have been brought to bear against the wool.

(Here follows diagram marked p. 174.)

In accompanying plate of drawings my improvements in wool-presses are illustrated, figure 1 being a plan or top view of the press with the sides swung down; Fig. 2, a plan or top view of the press with its sides swung up; Fig. 3, a central longitudinal vertical section, taken in the plane of the line *x x*, Fig. 2; Fig. 4, a transverse vertical section, taken in the plane of the line *y y*, Fig. 2; Fig. 5, an end view of a bale of wool pressed in my improved press; Fig. 6, a detail view.

Similar letters of reference indicate like parts.

A in the drawings represents the bottom boards of the press, to the sides of which are hinged the side and end pieces or boards, B B, and C C, of the press-box, so that they can be swung up or down, the sides and ends, when in a vertical position, forming a perfect square-shaped box, in which position they are secured by means of hooks D D, hung upon one side piece and interlocking with the notch *a* in the other, extending across the width of the box outside of the upper ends of the end boards, C C.

The bottom board, A, of the press-box has a series of grooves, *b b* and *c c*, extending entirely across its width in both directions and at right angles to each other, continuations of which grooves are made in the form of slots *d* and *f* in both the side and end boards, B B and C C, of the box, which slots, when the side and end boards are

swung up into a vertical position, extend in directions at right angles to the grooves in the bottom board, A.

Upon the inside face, at the center of each end piece C of the box, and in a vertical direction, are secured toothed or ratchet rack-bars F F, one to each end board, with the teeth of which engage the spring-arms G upon the upper side of the follower H, made of suitable size to fit within the press-box, as such follower is depressed or pressed down by weighting it in any suitable manner, thereby preventing the follower from rising or being lifted until said arms are disengaged by the swinging down of the end pieces, or in any other proper manner.

The use of my improved press, constructed and arranged as above described, is as follows: First, place the fleece upon the bottom board of the press, when roll it up upon each side, and then raise the side boards, B B, securing them in position by properly fastening either one of the two hooks D over and across from one to the other; then roll up either one of the two ends of the fleece, and, swinging up the end board at such end, the proper hook D is fastened across from one side of the press to the other, to hold the end board in such position, when the other end of the fleece is rolled up and its end board swung up and secured as explained for the opposite end. The follower is then placed in the top of the box, and weighted in any suitable manner, so as to press down the fleece with any desired degree of pressure, its spring-arms, by interlocking with the rack-bars of the end-boards, preventing the follower from moving upward, and thus holding it in its depressed position, when the cords which are to be used to bind the compressed fleece being drawn through the grooves in the bottom board of the press, are then passed up and around one side and end of the bale through the grooves *g g* in the under side of the follower, and down the opposite side
176 and end, where, meeting the other ends of the cords, they are tied together and about the bale, firmly and tightly binding the same together; after which the sides and ends are swung down, relieving the follower and leaving the bale free to be removed at pleasure.

I claim as new and desire to secure by letters patent—

The arrangement of the bottom board, A, the sides B B, and ends C C, as constructed with the follower H, spring-arms G G, rack-bars F, and hooks D D, substantially as and for the purpose herein specified.

SOLON COOLEY.

Witnesses:

W. L. BAINES.
E. BARLING.

[88.]

THOMAS STIBBS.

Improvement in Press for Pressing Yarn, &c.

No. 119,195. Patented Sep. 19, 1871.

No 96
Budds
Jones dec.
$177

Fig. 1.

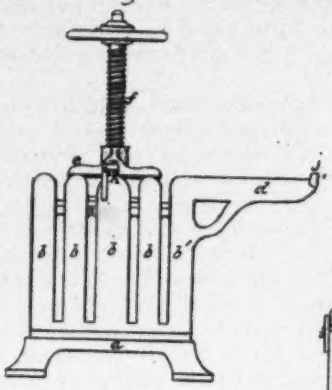


Fig. 3

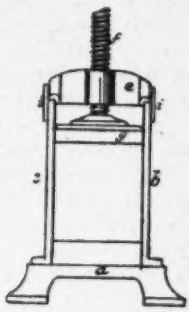


Fig. 2

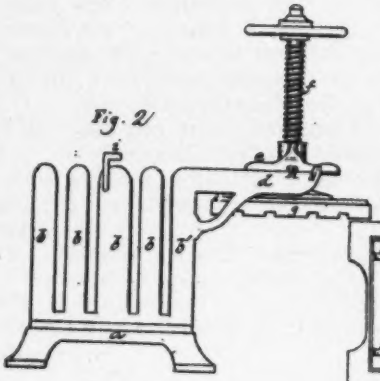
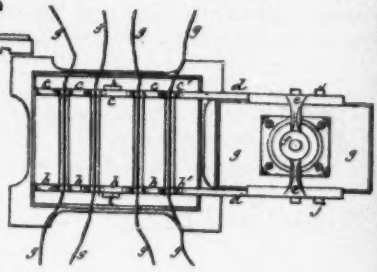


Fig. 4



Witnesses.
H. Morris Smith
H. A. Daniels 2nd

Inventor
Thomas Stibbs
By his attorney Z. C. Robbins

178

119,195.

UNITED STATES PATENT OFFICE.

THOMAS STIBBS, of Wooster, Ohio.

Improvement in Presses for Pressing Yarn, &c.

Specification forming part of Letters Patent No. 119,195, dated September 19, 1871.

To all whom it may concern:

Be it known that I, Thomas Stibbs, of Wooster, in the county of Wayne and State of Ohio, have invented a new and improved press, which is especially designed for pressing yarn but may be employed for other purposes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing which forms a portion of this specification, of which—

(Here follows diagram marked p. 177.)

Figures 1 and 2 are side elevations, representing different positions of the laterally movable as well as vertically movable platen of the press; Fig. 3, an end view of said press; and Fig. 4, a top view of the same.

An open frame-work, of the shape shown in the drawing, constitutes the body of my said improved press. Said frame-work consists of the base platform *a*, the vertical uprights or ribs *b b b b b'* and *c c c c c'*, which rise from opposite sides of said platform, and the horizontal arms or ways *d d*, which project outwardly from the uprights *b' c'*, as shown in Fig. 1. The upper ends of the uprights or ribs *b b*, *c c*, &c., are all brought to the same horizontal plane with the upper edges of the arms or ways *d d*; and the respective series of said uprights are also in line with the arm *d*, which projects from the right-hand upright of each of said series. A metallic carriage, *e*, of such a shape that its sides will rest upon and pass a short distance within the inner sides of the upper ends of the respective series of uprights *b b*, *c c*, &c., is placed upon the frame of the press, and may be freely moved to and from the various positions represented in the drawing. A vertical screw-aperture in the central portion of the carriage *e* receives the screw *f*, whose lower end is swiveled to the platen *g*, which platen works freely between the inner sides of the series of frame uprights or ribs *b b*, *c c*, &c., as shown in Fig. 3.

I prepare my improved press for the free reception of the yarn to be pressed by first screwing the platen *g* up to its highest position; then running the carriage *e* and the platen *g* out upon the arms or ways *d d* to about the position shown in Fig. 2; and then placing the tie-ropes *g g* through the open spaces between the uprights or ribs *b b c c* into the transverse grooves in the platform *a*. After the

requisite quantity of yarn has been placed within the space above the platform *a* the requisite tie-ropes are placed transversely above the same through the spaces between the respective uprights *b b*, &c., and *c c*, &c., and then the carriage *e* and the platen *g* are run inward until the lugs *h h*, which laterally project from opposite sides of said carriage, are carried under the retaining heads of the hold-fasts or hooks *i i*, which hold-fasts rise from and are secured to or form a portion of the central uprights or ribs *b c* of the frame-work of the press, as shown in Figs. 1 and 2; then, when thus prepared, the platen *g* is forced downward by the application of the requisite degree of power to the rotation of the screw *f*. After attaining the requisite degree of pressure upon the contents of the press, and after properly securing the ends of the tie-ropes to each other, the platen *g* is moved upward by a reverse movement of the screw *f*, and is then run outward upon the arms or ways *d d* preparatory to the removal of the pressed bale and the reception of the requisite material for the formation of another bale or package by a repetition of the same operation as that above set forth. The lugs *j j*, that rise from the outer ends of the frame arms *d d*, serve as guards to prevent the carriage *g* from being run out too far upon said arms.

I propose to sometimes elongate the frame-work, swivel, and multiply the hold-fasts *i i* of my improved press to such an extent as shall enable the press to receive two or more distinct charges of yarn or other material, to be pressed one after the other by one and the same platen.

I claim as my invention—

1. The open body of the within-described press, consisting of the platform *a*, the uprights or ribs *b b' c c'*, the hold-fasts or hooks *i i*, and the horizontal arms or ways *d d*, arranged substantially as and for the purpose set forth.

2. The combination of the jointly acting carriage *e* provided with lugs *h*, the screw *f*, and the platen *g* with the uprights or ribs *b b' c c'*, horizontal arms or ways *d d*, and the hold-fasts or hooks *i i*, of the body portion of the press, substantially as and for the purpose set forth.

In testimony that the foregoing is a full and clear specification of my new and improved press for compressing yarn, &c., I hereunto subscribe my name.

THOS. STIBBS.

Witnesses:

A. J. DE WITT.

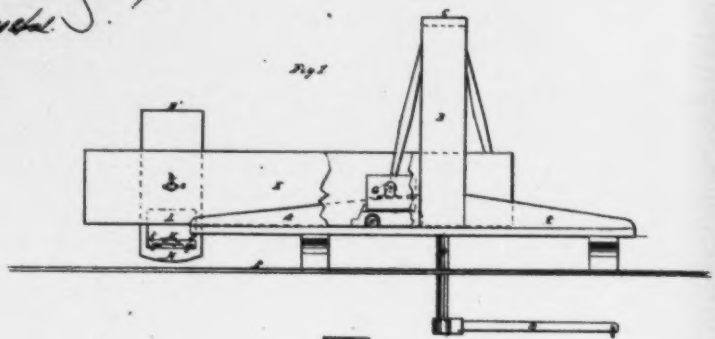
S. R. BOUNITZ.

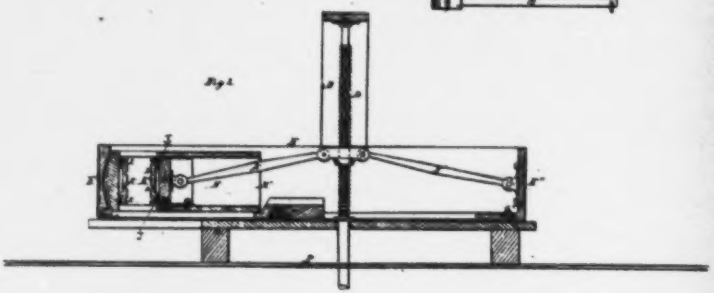
W. P. CRAIG.

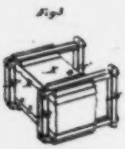
BALING PRESS.

No. 48,523. Patented July 4, 1865.

No. 96.
Book
Journal
$179







Witnesses
James H. Layman
C. L. Fisher

Inventor
W. P. Craig
By Philip Lee
Atty

180 UNITED STATES PATENT OFFICE.

WALDO P. CRAIG, of Milton, Kentucky.

Improvement in Baling-presses.

Specification forming part of Letters Patent No. 48523, dated July 4, 1865.

To all whom it may concern:

Be it known that I, Waldo P. Craig, of Milton, Trimble county, and State of Kentucky, have invented certain new and useful improvements in baling-presses; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My improvement relates, in part, to a provision whereby the advantages of tramping are secured in a portable baling-press, and also, in part, to an arrangement which enables the hooping of the bale to be effected outside of the press.

(Here follows diagram marked p. 179.)

Figure 1 is a side elevation of my machine in condition for tramping. Fig. 2 is a longitudinal section through the same represented in the act of pressing. Fig. 3 shows the bale after being pressed and before it has been hooped. Fig. 4 is a view of the clamp and tie-bar detached.

A represents a horizontal bed, from which rises a vertical frame, B, whose transom C contains a journal-bearing for the upper end of the screw D. The screw D has also a bearing in the frame A, and has attached to its lower extremity the sweep O. The bed A supports on friction-rollers *a a' a''* the carriage E, having two stout abutments, E' E'', to one of which, E'', the outer arm, F', of the toggle F F' is hinged, the inner arm, F, of said toggle being hinged to the follower G, which runs on the friction-rollers *g g'*.

I render my press available for tramping by means of a device which I call the "tumbling-box," and which is arranged and operated as follows: The vertical sides of the carriage E contains two horizontal slots, *e*, to receive the trunnions *h* of the tumbling-box H, which box, when liberated so as to revolve on its trunnions, assumes the vertical position, as shown in Fig. 1. The slots *e* permit the strain to be brought to bear against the abutment E and relieve the trunnions *h* of any strain whatever during the time the pressing is being effected. The tumbling-box H having been allowed to assume the vertical position, a slab, K, is deposited in its lower end, and the door L (of which there is one on each side of the tumbling-box H) being closed, the charging and tramping is commenced at the open end H' of the tumbling-box. The external faces of both of the slabs K K' are grooved at J to receive the rectangular clamp-

bars M M′, which, being inserted when the hay has become sufficiently compressed and their ends secured from separation by the tie-bars N N′, enable the removal of the bale. Before the commencement of the pressing the upper and outer slab, K′, is inserted, so that the bale is confined on opposite sides by slabs corresponding in area to the length and breadth of the bale, which slabs, intervening between the clamp-bars and the hay, confine the latter to its proper shape and dimensions for hooping. Grooves *k* in the inner faces of the slabs K K′ enable the insertion of the hoops after the removal of the clamped hay from the press. In the act of pressing the bottom (now inner end) of the tumbling-box H bears firmly against the abutment E′ of the carriage, and the pressing is effected by the simultaneous approach of the abutment E′ and follower G.

P is a floor or platform on which the press stands, and the sweep O may either revolve under the floor, as shown in Fig. 1, or it may be attached to the upper end of the screw D, and be operated in a room above that in which the press is situated.

I claim herein as new and of my invention—

1. The tumbling-box H, substantially as described and set forth.

2. The arrangement of tumbling box or trunk H, trunnions *h*, slots *e*, and abutment E′, substantially as set forth.

3. While disclaiming the general idea of hooping bales outside the press, I claim the combination of the U-formed clamp-irons M M′, tie-bars N N′, and grooved clamp-boards or slabs K K′, when constructed and employed as specified.

In testimony of which invention I hereunto set my hand.

W. P. CRAIG.

Witnesses:

GEO. H. KNIGHT.
JAMES H. LAYMAN.

No 96.
Busch
Smith
} p. 187

T. G. Hardesty.

Tobacco Press.

No 2,113. Patented May 29, 1841.

Fig: 1.

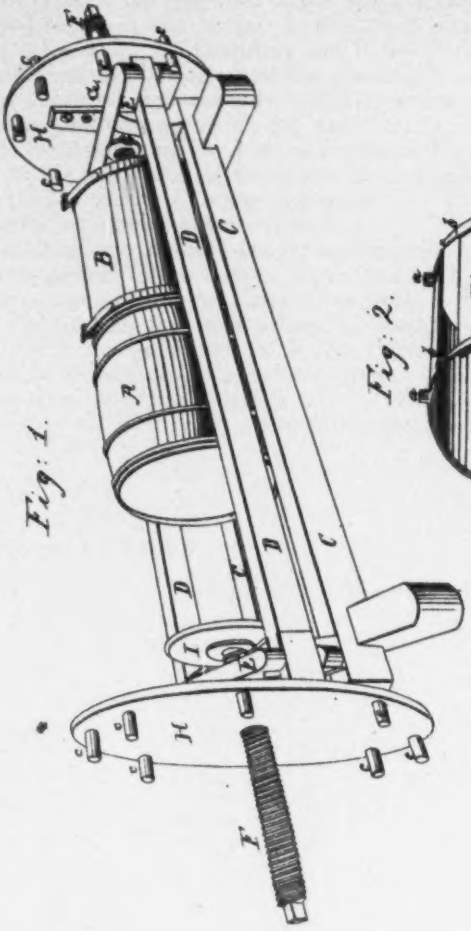


Fig: 2.

182 UNITED STATES PATENT OFFICE.

THOS. G. HARDESTY, of Tracy's Landing, Maryland.

Improvement in Tobacco-presses.

Specification forming part of Letters Patent No. 2113, dated May 29, 1841.

To all whom it may concern:

Be it known that I, Thomas G. Hardesty, of Tracy's Landing, in the county of Anne Arundel, in the State of Maryland, have invented a new and improved apparatus or press for pressing tobacco into hogsheads; and I do hereby declare that the following is a full and exact description thereof.

In my improved tobacco-press the hogshead into which the tobacco is to be pressed has both heads removed, and it is placed horizontally upon the frame of the press, resting upon two longitudinal pieces of timber, near the ground, prepared to receive it; and two false hogsheads or receiving-cylinders, the same in diameter, or nearly so, with the hogshead, are placed upon the same longitudinal pieces in a line with it, said hogshead being situated between them. The hogshead and the two false hogsheads are to be filled with tobacco by hand, and may be made to contain the whole quantity that is required to be packed in the hogshead. When thus prepared, pressure is to be made at each end of the apparatus by means of two screws, which force up two followers, said followers entering and passing through the false hogsheads and forcing all the tobacco which had been placed in them for that purpose into the hogshead situated between them. The false hogsheads are so constructed as to admit of their being removed from the press without its being necessary to retract the pressing-screws; and this I effect by uniting the staves which constitute the false hogsheads to bands or hoops of iron, which are clasped together at their ends, and when unclasped are to spring open sufficiently far to admit of the escape of the false hogsheads over the shaft of the screw. The same end may be attained by making one of the staves of each of the false hogsheads removable, and affixing it in place, when in use for packing, by means of loops and wedges confining it to the iron bands or hoops of the false hogsheads.

In the accompanying drawings—

(Here follows diagram marked p. 181.)

Figure 1 is a perspective representation of my press, with the hogshead that is to be packed and one of the false hogsheads placed upon its lower longitudinal pieces or sills; and Fig. 2 is one of the false hogsheads removed from the press and sprung open.

A is the hogshead to be packed, and B B′ are the false hogsheads.

C C are the lower longitudinal pieces or sills of the press.

D D are the upper longitudinal pieces, which are firmly connected to the two iron end or head pieces, E E, of the press. One or both of the pieces D D is to be made removable, to admit of the rolling of the hogshead and false hogsheads onto and off from the sills C C.

F F are two screws, which turn in boxes G, said screw-boxes being firmly attached to the power-wheels H H, and swiveling, by means of collars, in the iron head-pieces E E. Each of these screws carries a follower, I, on its inner end, and the screws must be of such length as to carry the followers entirely through the false hogsheads, and cause them to enter the ends of the hogshead A and to occupy the place which is to receive the heads.

The false hogshead, Fig. 2, is shown as sprung open.

a a are staples or eyes, which receive the catches *b b* on the ends of the hoops or bands J J. When sprung open, the false hogsheads may be readily removed, while the followers I are within the hogshead A; and the same may be effected, as before remarked, by making one of the staves of B B removable, and providing it with iron straps, by which it can be keyed onto the bands J J.

When this press is to be used, the two screws are to be turned back, so that the followers I will be in contact with the head-pieces E E. The hogshead and the false hogsheads, filled with tobacco by hand, are then to be placed in a range on the sills C C. The followers are now to be brought up to press upon it at both ends. In doing this the screws may at first be turned by means of a winch on their outer ends until the resistance is too great for this mode of proceeding. The power-wheels H H may then be turned by means of the rounds or handles *c c c*, by which means all the requisite force may be obtained and applied. When the pressure has been thus completed and the false hogsheads have been removed, the followers are to be so far withdrawn as to allow of the insertion of the heads between them and the tobacco. The heads are then to be forced up and secured in place.

183 It will be manifest that other means may be adopted of forcing up the followers, and that the screws F F may be dispensed with, while the false hogshead and the general arrangement in other respects may remain substantially as described. Thus, for example, racks and pinions may take the place of the screws and boxes, and the required power be thus applied. Although I prefer the screws, believing them to be the best arrangement, I do not intend, therefore, to limit or confine myself to their use, but to employ racks and pinions or other known means of forcing up the followers.

Having thus fully described the nature of my press for pressing tobacco into hogsheads and shown how the same operates, what I claim therein, and desire to secure by letters patent, is—

1. The manner in which I construct and employ the two false hogsheads by placing them horizontally in a range with the hogshead to be packed and pressing simultaneously from each end, as set forth.

2. The so arranging of the parts of the press as that two followers may be forced up, one from each end thereof by means of the pressing-screws operated by female screws or boxes attached to the power-wheels.

THOMAS G. HARDESTY.

Witnesses:

THOS. P. JONES.
ALEX. DUVALL.

185 UNITED STATES PATENT OFFICE.

JAMES B. ARCHER, of Yonkers, New York.

Improvement in Baling Manure and Other Substances.

Specification forming part of letters patent No. 181,389, dated August 22, 1876; application filed July 20, 1876.

To all whom it may concern:

Be it known that I, James B. Archer, of Yonkers, in the county of Westchester and State of New York, have invented a new and useful improvement in baling manure and other substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification.

(Here follows diagram marked p. 184.)

This invention is more especially designed for the baling of stable manure, in which it has heretofore been found difficult to meet all the requirements of properly confining the material in all parts of the bale, and yet to provide desirable ventilation. It is also applicable to the baling of hay and other substances or materials.

The improvement consists in the combination of two complete frames applied to opposite sides of the bale, and of a form and size to extend all along the edges, and to the corners of said sides, with bands which pass over the said frames and around the bale, and confine the material of bale between the said frames in such manner that the said frames form clamps to clamp said material firmly.

Figure 1 in the drawings is a perspective view of a bale illustrating my invention. Fig. 2 is a perspective view of one of the frames.

Similar letters of reference indicate corresponding parts in both figures.

The two frames are each composed of side pieces A A and end pieces B B, consisting of wooden slats, the said side pieces being of a length equal to the length of the bale, and the said end pieces being of a length equal to the width of the bale. These side and end pieces are nailed or otherwise secured together at the ends to form the frames, which are thus made of a size and form to cover the edges and corners of the two opposite sides of the bale to which they are applied.

The bands C C, of which there may be any number, may be of hoop-iron, wire, or other material, and may be fastened around the bale over the said frames by any suitable fastenings; but I prefer to provide them with hooks *a a* and eyes *b b*, two or more eyes in each band, so that some time after the bale has been com-

J. B. ARCHER.

BALING MANURE AND OTHER SUBSTANCES.

No. 181,389. Patented Aug. 22, 1876.

No 96
Busch
Jones et al
p 184

Fig. 1.

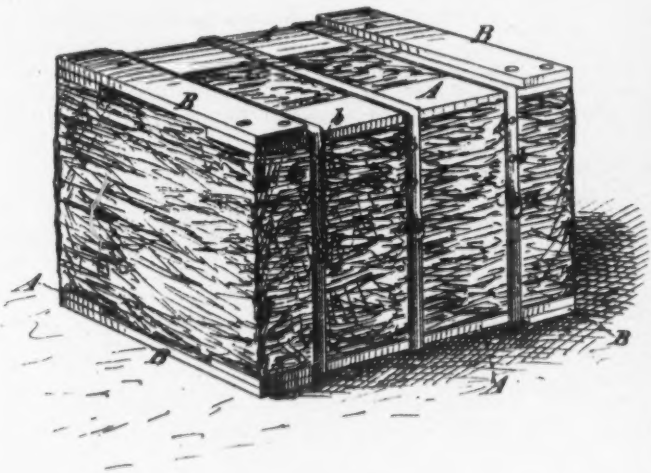
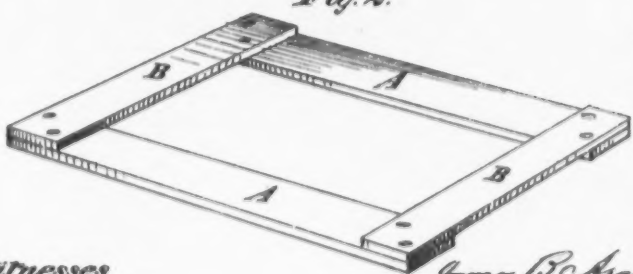


Fig. 2.



Witnesses
John Booker
Fred Hoffman

James B. Archer
by his Attorneys
Brown & Allen

pressed and the material in it has shrunk by drying, it may be re-compressed and the bands tightened up.

The frames A B having been made, the bale is formed in a bailing-press of suitable size by first placing one of the frames on the bottom of the box of the press, then filling in upon it the requisite quantity of the material to be baled, afterward putting on the top frame, and then subjecting the contents of the bale between the frames to a suitable pressure. The bands having been applied at a suitable stage in the operation, have their ends fastened while the bale is subject to pressure, and after they have been fastened the box of the press is opened and the bale turned out.

The bale thus formed confines and protects the material most effectively; but the contents may be still further protected at the corners or other parts by placing cleats across the bale from one frame to the other, and nailing them to the two frames.

What I claim as my invention is—

The combination, with a bale, of the clamping-frames A B A B, applied to opposite sides of the bale, and the bands C C, passing over the said frames and around the bale, substantially as herein described.

J. B. ARCHER.

Witnesses:

BENJAMIN W. HOFFMAN.
FRED. HAYNES.

187 UNITED STATES PATENT OFFICE.

CHARLES BROWN, of New York, N. Y.

Improvement in Baling Short-cut Hay.

Specification forming part of Letters Patent No. 169,518, dated November 2, 1875; application filed September 28, 1875.

To all whom it may concern:

Be it known that I, Charles Brown, of the city, county, and State of New York, have invented a new and useful improvement in baling short-cut hay and straw, with or without feed; and I do hereby declare that the following is a full clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

Long hay is usually baled on or convenient to the place upon which it is produced, and the same afterward sent to market for future use, either by working it up into short-cut hay, or otherwise.

In baling long hay it is customary to use four or six heavy sticks arranged lengthwise upon the exterior of the bale, and these sticks, after the bale has been broken or used, have had but little if any value.

One of the objects of my invention is to use these sticks in the baling of short-cut hay or straw, with or without feed; and although place is immaterial, this can, generally, be done most economically in the market towns or cities where the long hay has been sold.

In baling short-cut hay or straw, with or without feed, however, a different and much closer arrangement of the binders is necessary; and my invention consists in a novel combination of cross-edge and longitudinal-edge sticks and separated slats applied to opposite sides of the bale, the whole being bound together, with the compacted contents of the bale, by bands, cords, ropes, or wires, substantially as hereinafter described, and whereby I am not only enabled to use the sticks previously employed in baling long hay or other rough sticks, but am able to bale the short-cut hay or straw, with or without feed, in a most economical, complete, and solid manner, and so that the contents of the bale are protected alike from heating and from injury by exposure to the weather.

The drawing represents a view in perspective of a bale of short-cut hay or straw, with or without feed, put up in accordance with my invention.

(Here follows diagram marked p. 186.)

A A and B B are four sticks, which may have been previously used in baling long hay; or they may be specially made for baling short-cut hay or straw, with or without feed. These sticks A A and B B are placed in the cut-hay press before the loose and uncompacted short-cut hay or straw, with or without feed, is filled into the

C. BROWN.

BALING SHORT CUT HAY.

No. 169,518. Patented Nov. 2, 1875.

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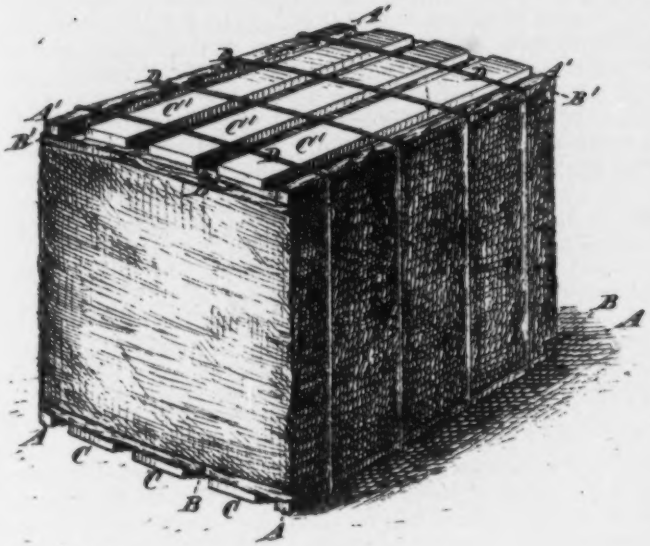


Witnesses
John Becker
Fred. Haynes

Charles Brown
by his Attorneys
Brown & Allen

press, and so that the binders A A will underlap at their ends the binders B B, thus binding four of the edges of the bale. After this, the loose and uncompacted short-cut lay or straw, with or without feed, is put into the press, and four more sticks, A′ A′ B′ B′, are placed in a corresponding relation with the other sticks A A B B, on or along the four edges of the upper or opposite side of the loose or uncompacted masss, or uncompressed contents of the bale. There are also placed between the longitudinal or side-edge sticks A A and A′ A′, on the upper and lower or opposite sides of said loose mass or unpressed contents of the bale, two or more thin wood slats, C C and C′ C′, separated from each other, respectively, and with their ends also resting on or lying over the cross-sticks B B B′ B′. These slats may be arranged at a distance of two or three inches apart, more or less. Pressure is then applied to the mass thus bound and protected, and when sufficiently compacted, bands, cords, ropes, or wires D D are passed and fastened around the compressed mass of short-cut hay or straw, with or without feed, and around the sticks or binders A A′ and slats C C′, to retain the bale in its compacted form.

By the combination of the cross-edge sticks B B′ with the longitudinal-edge sticks A A′ the bale is bound on eight of its edges by the sticks, thus preventing the spreading of both the sides and ends of the bale, and preventing the contents of the bale from becoming loosened and wasted during handling or transportation of the bale. This retaining of the compactness of the bale at its sides and ends resists the effects of dampness and wet.

By the combination of the separated slats C C′ with the sticks A A′ and B B′, not only is the bale more firmly braced or held together, but any wet or dampness which the bale has contracted by long or severe exposure to the weather will escape by evaporation on suitably exposing the bale to the air or sun, whereas a close covering on the same sides of the bale causes the wet or dampness to be retained in the bale, so that the contents of the latter are seriously injured or made worthless by heating and rotting.

188

I claim—

The combination of the longitudinal and separated slats C C′ with the cross-edge sticks B B B′ B′, the longitudinal-edge sticks A A A′ A′, applied to opposite sides of the bale, and the binding bands, cords, ropes, or wires D, substantially as shown and described, and for the purposes herein set forth.

CHARLES BROWN.

Witnesses:
MICHAEL RYAN,
HENRY T. BROWN.

190

125,786.

UNITED STATES PATENT OFFICE.

CHARLES BROWN, of New York, N. Y.

Improvement in Baling Short-cut Hay or Straw.

Specification forming part of Letters Patent No. 125,786, dated April 16, 1872.

Specification describing an improvement in baling short-cut hay or straw, the invention of Charles Brown, of the city, county, and State of New York.

This invention relates to the putting up of short-cut hay or straw in compact bales of convenient size, shape, and weight for handling, transportation, sale, and use as feed for horses or cattle, and for other purposes. The invention consists in putting up short-cut hay or straw in packages, each of which constitutes a hollow bale, formed by a passage arranged to extend through the bale, and the walls of which are composed of the contents of the bale, whereby a more perfect ventilation is effected, so that the hay or straw may be put up greener than when baled so as to present only an outside exposure, and whereby increased facility is afforded for handling the bale or for lifting it from place to place, especially over mud or dirt. Such hollow or ventilated bale I prefer to make of cylindrical form, for the purpose of further facilitating transportation by rolling, and whereby that loss or waste which is incidental to square-shaped bales is avoided, both in moving the bale about and in detaching it for feed, by reason of the bale presenting no sharp edges or angles up its sides, and the greater convenience with which it may be chipped off as required. The invention also consists in a hollow cylindrical bale, braced at its ends by segmental wooden strips and hoops, cords, or wires, arranged to extend across the strips and down the sides of the bale in planes parallel to the axis of the latter, whereby said hollow bale is very effectually bound without impairing its ventilation; and long hay or straw may be used for partly covering the ends of the bale to hold the contents in place and to provide for ventilating the same.

In the accompanying drawing—

(Here follows diagram marked p. 189.)

which forms part of this specification, figure 1 represents a longitudinal outside view of a bale of short-cut hay or straw put up in accordance with the invention; Fig. 2, an end view of the same; and Fig. 3, a longitudinal section thereof.

To press the short-cut hay or straw A into the form of a hollow cylinder, as shown, said material may be suitably piled or packed

CHARLES BROWN.

Improvement in Baling Short Cut Straw or Hay.

No. 125,786. Patented April 16, 1872.

Fig. 1

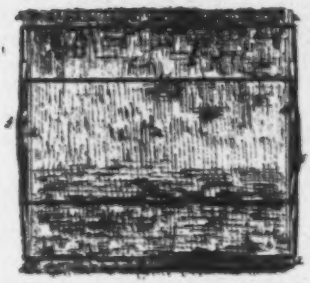


Fig. 2

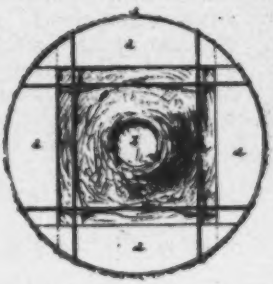
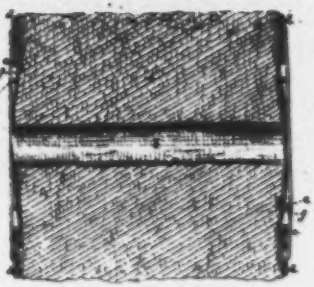


Fig. 3



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Buckle
vs
Jones &c
p. 189

Witnesses:
[illegible]
[illegible]

Charles Brown
per Thos. Coombs & Co
Attorneys

in a box of cylindrical shape, open at its ends, and resting on a grooved base for passage of the binding-hoops, cords, or wires, said base also carrying a mandrel for forming the passage *b* in or through the bale and the follower of the press, which works within the box, being grooved like the base, also made hollow to receive the mandrel through it. The box itself should be made to open down its sides, either by hinges or otherwise, and so that when open it may be removed, whereby the bale is left wholly exposed at its sides for the convenience of hooping or binding it, the hoops, ropes, or wires *c c* being passed through the grooves in the base and follower in planes parallel with the axis of the bale, and over segmental wooden strips *d d*, arranged to lie one upon the other, so as to brace the ends of the bale without impairing the ventilation. Long hay or straw *f* may also be arranged over or at the ends of the bale to act, conjointly with the strips, to hold the contents of the bale in place, and to provide for the ventilation of the bale between the strips. The passage *b* through the bale, in addition to its ventilating purpose, may also be used, by insertion of a pole or stick through it, to carry the bale.

What is here claimed, and desired to be secured by letters patent, is—

1. A hollow bale of short-cut hay or straw, substantially as specified.

2. The combination, with a hollow cylindrical bale, A, of the segmental-shaped binding-strips *d d* at the ends of the bale and the hoops, cords, or wires, *c c*, arranged to cross said strips and to extend down the sides of the bale in planes at right angles to the axis of the latter, essentially as described.

CHARLES BROWN.

Witnesses:

HENRY T. BROWN.
FRED. HAYNES.

192 UNITED STATES PATENT OFFICE.

RUSSELL A. HART, of Battle Creek, Michigan.

Signature-press.

Specification forming part of Letters Patent No. 394,977, dated December 25, 1888. Application filed September 3, 1887. Serial No. 248,669. (No model.)

To all whom it may concern:

Be it known that I, Russell A. Hart, a citizen of the United States, residing at Battle Creek, county of Calhoun, State of Michigan, have invented a new and useful signature-press, of which the following is a specification.

The objects of this invention will appear in the following description and claims.

One prominent object which may be mentioned is a construction and arrangement of parts whereby the press automatically stops when the bundle of printed pages is sufficiently compressed.

Another leading object consists in constructing the tray in which the pages are placed and the blocks between which the pages are compressed so that the bundle of pages after being compressed can be readily tied with a strand of cord on each of the four sides and crossed at each end, and this while the compressed bundle is still in the press.

(Here follows diagram marked p. 191.)

In the drawings forming a part of this specification, figure 1 is a side elevation with parts removed, below described; Fig. 2, a plan; Fig. 3, end view of parts shown in Fig. 1, looking from a point at the left. Fig. 4 is a detail view, in elevation, from the same point of observation. Fig. 5 is a transverse section on line *p p* in Fig. 1. Fig. 6 is a detail view, in cross-section, of elements *y*, *u*, and *r* in Fig. 5 on line *w w*. Fig. 7 is a perspective view of a supplemental tray, hereinafter described; Fig. 8, a section on line 2 2, Fig. 1, looking from a point at the right; and Figs. 9 and 10 are enlarged views, in perspective, of blocks C and C′, and Fig. 11 of frame A, shaft *x*, and plate *z*′, all in Fig. 1.

Referring to the lettered parts of the drawings, A′ is a V-shaped tray supported by standards T, these parts constituting a part of the frame A, in which the internally-threaded shaft *x*, with internal screw, *c*, is supported. The tray A′ has slots *c c*′ through each of its oblique sides and a V-slot, *f*, through one end, Fig. 3. The screw *c* has a head, *o*, against which the block C is placed cornerwise in the tray A′. The block C′ is placed in the other end of the tray A′.

In Fig. 7 is shown a supplemental V-tray having one closed end and slots in the oblique sides, which slots register with the slots *c c*′ in the main tray A′. The printed leaves are placed on their edg

13647

No. 96. Patented Feb. 19, 1889

(No Model.)

R. A. HART.

SIGNATURE PRESS.

No. 394,977. Patented Dec. 25, 1888.

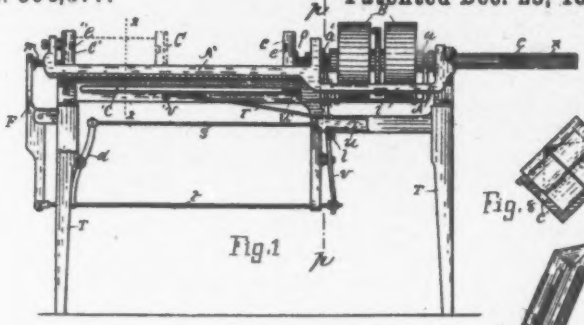

Fig. 1

Fig. 8

Fig. 7

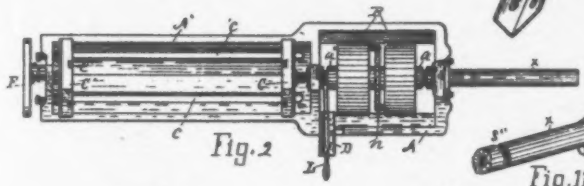

Fig. 2

Fig. 11

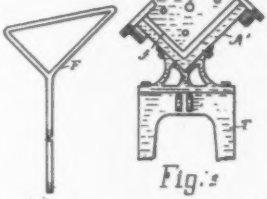

Fig. 4

Fig. 3

Fig. 6

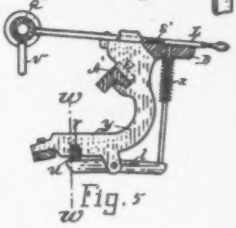

Fig. 5

Witnesses.
John C. Perkins.
Philip P. Schaum.

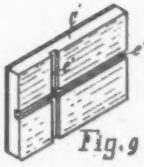

Fig. 9

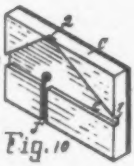

Fig. 10

Inventor.
Russell A. Hart.
By Lucien C. Hart
Atty.

cornerwise in the supplemental tray, Fig. 7, and the latter is placed with its contents in the tray A′. The blocks C C′ are placed at the ends of the bundle of leaves in the supplemental tray. One of the pulleys B is then slid on the shaft *x* to engage with the dog *n* by swinging the lever L.

The arrangement of the pulleys B, which revolve in opposite directions, and the dog *n* and screw *c* are not new, *per se*, and will be understood without details being given. Suffice it to say that when one of the pulleys engages the dog the screw *c* moves forward toward the left, as here shown, and when the other pulley engages the dog the screw moves back. When the screw moves forward, the leaves are compressed, the block C being carried along, as indicated by the dotted position in Fig. 1.

When sufficient pressure is brought to bear, the block C′ presses hard enough against the spring-actuated slide *m* to force it against the upper end of the pivoted lever F. This action moves the rod *t*, which is attached to the lower end of lever F and the lower end of the pivoted lever *v*, which operates the left-hand pulley, and of course said pulley is by that means slid away from the dog *n* and the screw thus automatically stopped. The supplemental tray is also slid along and its open end extends out through the slot *f* of the tray A′ and through the opening in top of lever F, Fig. 4, this slot and opening being made purposely to accommodate the supplemental tray. The sliding action of this tray is not illustrated, but will be understood, as the head *o* of the screw *c* slides it and the block C along at the same time; but the supplemental tray may be dispensed with, if desired, and the leaves be placed directly in the tray A′.

The blocks C′ C are so constructed on their inner faces (one having transverse grooves *e′ e″*, Fig. 9, and the other a three-cornered mortise, *e*, each corner opening through the edge of the block, and a groove, J, leading from the other edge of the block into the mortise or recess *e*, Fig. 10) that by the use of a large needle the compressed bundle can be tied with a cord, so there will be a strand on each of the four sides of the bundle and crossing at the ends,
193 the same as a package can be tied when held in the hands. By this means when the screw *c* is run back releasing the bundle it is ready to be taken out of the press, and is firmly held in its compressed condition.

The plan of tying is not here illustrated, but the following will make it clear. A loop is made in one end of the cord and caught over a stud or the like to hold it. The other end is put through one of the channels of block C′, thence along one of the oblique sides of the bundle, and then passed obliquely through the recess *e* of block C—as, for instance, from 1 to 2. At 2 the cord is caught over a stud, (not shown,) from thence along the second side of the bundle and through the other groove of block C′, back along the third side of the bundle and through groove J, and up through the loop which was left at 2, and thence from 2 to 3 and along the fourth side of the bundle to the place of starting. The cord is then caught through the first-named loop, and then by releasing the loop at 2 and draw-

ing the cord tight and tying it the bundle is bound at the sides and ends, as before stated. The recess *e*, Fig. 10, allows the loop, which was at 2, to be drawn to the center of the end of the bundle. The crossed cord in Fig. 8 shows the appearance at this end of the bundle—left-hand end in Fig. 1.

The lever L, Fig. 5, is pivoted to a bracket, *y*, which bracket is attached to the frame in Fig. 1, but is not shown in said latter-named figure. The lever L engages a lug, S′, and as the other end of said lever enters the groove *a′* of one of the pulleys, the left pulley is locked in proper position to move the screw *c* forward. *u* is a sliding wedge, Figs. 1 and 5, to which a rod, S, is attached. The other end of rod S is attached to the upper end of the centrally-pivoted lever *d*, and the lower end of this lever is attached to the rod *t*. By this means when the end lever, F, operates by the pressure of the block C on the slide *m* the wedge is drawn forward, pressing down on the end of the lever *l*, Fig. 5. This lever is shown in cross-section in Fig. 1. At *z*, Fig. 5, is a spring-actuated plunger, which is carried upward by the lever *l* when the wedge *u* tilts said lever, and this raises the lever L, unlocking it from the lug S′, so that the lever *v* can slide the left-hand pulley B out of engagement with the dog *n*. The lever L is shown clearly in the plan in Fig. 2. The head *o* of the screw has a projection, *u′*, through the slot *c′* of the tray A. Should the screw *c* be started by accident or meddlesome design when the projection *u′* comes in contact with the head *v′* of the rod *r*, Fig. 1, the wedge *u*, to which said rod is attached, will be drawn forward, unlocking the lever L, and as the rod S is also attached to the wedge the lever *v* (by means of the hereinbefore-described construction) will be tilted and the movement of the screw *c* will be automatically stopped.

It should have been stated that the registering elongated slots in the oblique sides of the two trays enables the cord-needle to be inserted into the grooves of the blocks C′ C, as before explained.

In Fig. 11 I have shown a broken portion of the frame A and the shaft *x* in perspective, showing also grooves S″ in the shaft *x*, near the bearings, into which groove a semicircular plate, *z′*, is inserted edgewise beneath the shaft, and is secured to the face of the bearing, which in Fig. 11 is the end of the frame A. The object of this plate is to keep the oil from unduly running out of the bearings. One of these plates may be employed on each side, and they may be at each end of the shaft, or, rather, at each bearing of the shaft.

The screw is automatically stopped from running too far back by means of a sliding bar, *i*, Fig. 1, right-angled at each end. One end enters the groove *a* of the right-hand pulley B, and the other end passes up through a slot in the tray A to contact with the head *o* of the screw, which contact throws the pulley to the right, disengaging it from the dog *n*.

Having thus described my invention, what I claim is—

1. The combination of the main tray having the slotted sides with the blocks having crossing-grooves in one and the three-cornered recess and the groove in the other, and means for compressing the bundle between said blocks, substantially as set forth.

2. The combination of the main tray having the side slots and the V end slot, the slotted supplemental tray, the grooved and recessed blocks for placing at the ends of the bundle in the latter-named tray, and means for compressing the bundle between the blocks, substantially as set forth.

3. The combination of the main tray, the blocks for placing at the ends of the bundle, the screw, dog, and sliding pulley, a spring-actuated slide which is operated by pressure of one of the blocks, a pivoted lever operated by said slide, a pivoted lever for operating the sliding pulley, and a rod connecting the ends of said pivoted levers, substantially as set forth.

4. The combination of the frame, the press screw and dog, the sliding pulley, the hand-lever engaging the lock-lug, the sliding wedge, a pivoted lever operated by said wedge, the spring-actuated plunger for lifting the hand-lever to unlock the same, the headed rod projecting from the wedge, a projection on the head of the screw to contact with the head of said rod, a lever for operating the sliding pulley and rods, and a pivoted lever connecting the pulley, lever, and wedge, whereby when the wedge is drawn forward the hand-lever is unlocked and the pulley is disengaged from the dog, substantially as set forth.

5. The combination of the frame, the traveling screw, a dog on said screw, a sliding pulley adapted to engage said dog to cause the screw to recede, and the sliding bar right-angled at the ends, one end being in position to be brought in contact with the head
194 of the screw and the other end in the groove of the sliding pulley, whereby the receding screw is automatically stopped, substantially as set forth.

6. The combination of the frame, the shaft having the grooves, and the semicircular plates inserted in said grooves, substantially as set forth.

In testimony of the foregoing I have hereunto subscribed my name in presence of two witnesses.

RUSSELL A. HART.

Witnesses:

A. R. HENRY.
M. B. DUFFIE.

195 *Remarks of Justice Hagner as to Decree.*

Filed January 30, 1896.

In the Supreme Court of the District of Columbia.

JONES and THE HICKOK MAN'F'G CO. *vs.* CLARENCE M. BUSCH. } No. 15391. Equity.

My examination of this cause has satisfied me the complainants are entitled to a decree for an account and for an injunction, as prayed.

19—96

The complainants' counsel may prepare a decree accordingly.

A. B. HAGNER,
Asso. Justice.

Jan'y 30, 1896.

Interlocutory Decree.

Filed February 11, 1896.

In the Supreme Court of the District of Columbia.

J. W. JONES and W. O. HICKOK MANUFACTURING COMPANY vs. CLARENCE M. BUSCH.	In Equity. No. 15391, Docket 36.

This cause coming on to be heard upon pleadings and proofs and having been argued by counsel for the respective parties and having been fully considered by the court, it is hereby, this 11th day of February, 1896, by the court, ordered, adjudged, and decreed as follows, viz:

That letters patent of the United States No. 204,741, granted to the plaintiff, Joshua W. Jones, on the 11th day of June, 1878, for bookbinders' dry-press and sheet-tie, are good and valid in law.

That Joshua W. Jones was the original and first inventor of the invention described and claimed in said letters patent; that the legal title to said patent and to the invention described and claimed therein is vested in the said Joshua W. Jones, one of the plaintiffs herein; that the said W. O. Hickok Manufacturing Company, the other plaintiff herein, is the exclusive licensee to manufacture and sell, to be used by others throughout the United States, machines containing the inventions or discoveries described and claimed in said letters patent; that the defendant has infringed the said letters patent and the exclusive rights of the plaintiffs thereunder by making, using, and vending within the United States machines embodying the improvements specified in said letters patent and particularly claimed in the 1st, 2nd, and 4th claims of said letters
196 patent, and also by practicing the process embodying the improvement specified and particularly claimed in the 5th claim of said letters patent.

And it is further ordered, adjudged, and decreed that plaintiffs do recover from the defendant the profits, gains, and advantages which said defendant has received or made or which have arisen and accrued to him by reason of any infringement by said defendant of the said first, second, fourth, or fifth claims of said letters patent No. 204,741 since the date of said letters patent, and also the damages which the plaintiffs have sustained by reason of said infringement to be assessed as provided by statute.

And it is further ordered, adjudged, and decreed that this cause be referred to the auditor of this court to ascertain, take, state, and report an account of the gains, profits, and advantages which the said defendant has received or which have arisen or accrued to

him from the manufacture, use, or sale of machines or the practicing of said process described and claimed in claims one, two, four, and five of said letters patent No. 204,741, and also to assess the damages suffered by the plaintiffs herein by reason of said infringement.

It is further ordered, adjudged, and decreed that the plaintiffs on such accounting have the right to cause an examination of said defendant *ore tenus* or otherwise, and also the production of the books, vouchers, and documents of said defendant, and that the said defendant attend for such purpose before said auditor from time to time as said auditor shall direct.

And it is further ordered, adjudged, and decreed that a perpetual injunction issue in this cause against the defendant, Clarence M. Busch, his servants, attorneys, workmen, employees, and representatives, and each of them, perpetually enjoining and restraining him and them from directly or indirectly using, vending, or offering for sale any machine embodying the improvements specified in claims one, two, or four of said letters patent made prior to the expiration of said letters patent.

And it is further ordered, adjudged, and decreed that the plaintiffs do recover of the defendant their costs, charges, and disbursements in this suit, to be taxed by the clerk of this court.

A. B. HAGNER,
Asso. Justice.

Final Report of Auditor.

Filed March 26, 1897.

In the Supreme Court of the District of Columbia.

J. W. JONES and W. A. HICKOK Manufacturing Company *vs.* CLARENCE W. BUSCH. } No. 15391, Equity Doc. 36.

By a decree passed on the 11th of February, 1896, this cause was referred to me to ascertain, take, state, and report an account
197 of the gains, profits, and advantages which the defendant has received or which have arisen or accrued to him from the manufacture, use, or sale of machines or the practicing of the process described and claimed in claims 1, 2, 4, and 5 of said letters patent No. 204,741, and to assess the damages suffered by the plaintiffs by reason of said infringement. This cause was moved in this office in December, 1896, and, upon notice, was set for hearing for Tuesday, the 22d day of December, at which time the counsel for the plaintiffs and the defendant respectively appeared and submitted and filed testimony for the plaintiffs, taken in Harrisburg, Pennsylvania, together with a stipulation of the said counsel that the testimony of witnesses in this accounting might be taken before any officer competent to administer oaths with the same effect as if regularly taken before the auditor. This testimony is marked "auditor's

record," and when referred to in this report will be so designated by way of distinction from the printed records containing, respectively, the evidence submitted by the parties prior to the granting of the decree. The subject-matters of the reference were then argued by counsel and a brief filed by the counsel for the plaintiffs. Upon leave granted for that purpose the counsel for the defendants subsequently transmitted, to be filed, a brief in behalf of the defendant, and these briefs are returned with this report.

The patent in question contains four specific claims illustrated by the drawings attached to the patent, and in the fifth claim a description of the process. As bearing upon the question of accounting, I quote the fifth claim in full, as follows:

"The process herein described for treating folded printed sheets of paper in dry-pressing, the same consisting of subjecting a collection of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles with end boards, then removing them immediately from the press and allowing them to remain tied sufficiently long to fix and complete dry-pressing."

It is established in proof that the defendant used the infringing machine from September, 1893, to the 10th of February, 1895, when it was destroyed by fire; that during the said period the defendant was the public printer for the State of Pennsylvania, and in the performance of the work done by him as such public printer he used the infringing machines during the period named. It will be seen that the subject of an accounting in such a case is not to show what profits as such were made by the use of the infringing machine. It is alleged that by its use the defendant made savings in the cost of the work performed with the machine, and that these savings are included under the terms of the decree as constituting gains and advantages which have accrued to the defendant from the use of the infringing machine or the practicing of the process described in the sustained claims.

In the case of Tilghman *v.* Proctor, 125 U. S., p. 136, the Supreme Court held that, if the unauthorized use by the defendant of a patented process produced a distinct saving in the cost of manufacture, he must account to the patentee for the amount so saved:

198 The court in that case having adjudged that Tilghman's patent was a valid one for a process; that the apparatus described could be operated to produce a beneficial result, and that the defendants had infringed the complainant's patent, the master to whom the case was referred found from the evidence that the complainant had derived no profit from the invention otherwise than by granting licenses to others to use the same; that for several years the respondents held such a license, but terminated the same, refusing to pay the license fees after a certain period, although continuing to use the process until the expiration of the patent, between four and five years afterward. The master reported that as to the profits, gains, savings, and advantages which had accrued to the defendants the process described in the patent was more advantageous than any other process open to public use at the time in question, and re-

ported the defendants' savings in certain material and their gain in a product, setting off against this their loss in another direction, and thus showing the net gains and savings. After drawing a distinction between the extent of a recovery for the infringement of a patent at law and under a bill in equity and holding that in the latter proceeding the owner of the patent is entitled to recover the amount of gains and profits that the defendant has made by the use of the invention, the court announces the rule to be that the profits for which the infringer must account are the fruits of the advantage which he derived from the use of the invention over what he would have had in using other means then open to the public and adequate to enable him to obtain an equally beneficial result. In that case the defendants contended that the plaintiff, having established license fees for the use of his patent, was not entitled to any gains and profits accruing to the defendants in excess of those fees, but the court held the plaintiff had the right and was entitled to have a decree for profits.

It appears that the printing law of Pennsylvania required that all of the work should be dry-pressed, and the defendant, testifying on page 5 of the auditor's record, states as his reason for purchasing the infringing machine that the printing law of 1876 provided for such dry-pressing and to avoid any possible objection to the use of any other process than what was known as dry-pressing. The dry-pressing spoken of seems to be a technical name for the character and result of the process. It appears that the impression of the type in printing leaves upon the page next the press the impression of the type in concave form, while on the opposite side of the sheet those impressions appear in convex form. In the use of the machine and process of the plaintiff the sheets containing respectively the concave and convex characters were placed against or upon each other so as to register the lines as fully as practicable, and as a result of the process the convex and concave features were removed and the printing given a smooth, regular appearance. It also appears that by reason of the admission of a current of air between the sheets at a period of the process any dampness of the ink was removed,
199 this feature tending to some extent to justify the designation of the process as that of dry-pressing.

In order to ascertain the savings to the defendant resulting from the use of the invention, it becomes necessary to inquire what other means were then open to the public and adequate to obtain an equally beneficial result. In pursuing this branch of the inquiry it will be convenient to describe first the process of the plaintiffs' invention. T. J. W. Robertson, a witness produced on behalf of the complainants, and whose deposition is begun on page 30 of the plaintiffs' printed record, and who it was agreed by counsel for both parties was competent to testify as an expert witness in patent matters, testifies that he had examined the letters patent in question here, and describes the improvement covered by claims 1, 2, 4, and 5 as a process for treating folded printed sheets whereby the impressions made in the letter-press printing process are flattened out so that the paper will assume its original smoothness or substan-

tially so, which process is carried out in such a manner that the operator can be continually putting in the signatures or printed matter and removing them in tied-up bundles, whereby with one press a much larger number of signatures can be pressed and at a much reduced cost for labor over that of the process previously employed. The witness refers to the means for carrying out this process, as shown in the drawings attached to the patent, and proceeds to state that prior to this invention it was the custom to press printed sheets by inserting them between heavy paper boards—sometimes called fuller-boards; also called glazed boards—and putting said boards, with the printed papers between them, into a powerful press, pressure being produced on said boards sometimes by screw and sometimes hydraulic pressure; that this pressure was continued by allowing the press to remain with such pressure on to its fullest extent for ten or twelve hours or more, when the papers and boards were taken from the press and separated by removing the boards from the pile of combined boards and paper and putting the boards on one pile and the printed papers on another; that by the process of this invention the printed sheets are allowed to remain only long enough for the operator to tie up the bundle, when they are immediately removed, the entire process of putting the paper into the press, tying it up in the bundle, and removing it therefrom taking but a few minutes; that the signatures, meaning the sheets of printed matter, are thus allowed to remain tied up in bundles for a time, which may be from twenty-four hours to three or four days, or may be extended longer, and that the long-continued pressure after the bundle has left the press is therefore an essential part of the process. Referring to the difference between the old or prior process and that set forth in the Jones patent, this witness proceeds to state that in the old plan, where two or more sheets were set between the boards, the convex side of the impression on one sheet came in contact with the concave side of the sheet above it, so that these sheets would have little or no effect upon each other in smoothing out the impressions, while in the process of the Jones patent the sheets when folded
200 have the convex impression of one-half of a sheet brought in contact with the convex side of the other half of the sheet. This witness proceeds with considerable detail to describe the entire operation of this so-called dry-pressing process, and refers particularly to the claims 1, 2, and 4 and the drawings or figures illustrating these claims. He then concludes by saying as to the fifth claim that this claim covers the process of pressing folded sheets or signatures by first subjecting them to pressure, then tying them between boards in a compact bundle and removing them from the press and allowing them to remain tied a sufficient length of time to efface the impressions produced by printing. It may serve to enlighten the comparison to be made between the process of this invention and other processes relied upon by defendant's counsel as being in existence, open to the public, and adequate to obtain an equally beneficial result if I refer to the process described by many, if not all, of the witnesses who testified on that subject here as generally in use prior to the patenting of the Jones process—that is, what was known

or designated as the fuller-board process. The witness Suydam, produced in behalf of the plaintiff, and whose testimony will be found on page 9 and the following pages of the auditor's record, being a bookbinder by trade and having served as foreman of the State bindery of Pennsylvania for ten or eleven years, states that there were two methods of accomplishing what was known as dry-pressing used in the said State bindery, one being the old method of dry-pressing with fuller-boards and what was known as a standing hydraulic press, and the other the Jones dry-pressing system, which was introduced some time in the seventies. This witness, on page 14 of the auditor's record, describes the two processes or operations by way of comparison, first giving the fuller-board process as follows:

"The sheets were taken from the press-room direct to the sheet-room; they were there hung upon rods to dry. After they were dried they were taken off the rods; brought down into the folding-room; they were then placed between fuller-boards, three or four sheets at a time; from there they were placed in the hydraulic standing press; the press was then run up tight by hydraulic pressure. After being pressed, as a rule, over night the pressure was taken off the sheets, the press emptied of fullers-boards and sheets, and the sheets taken out from between the boards. The sheets were then folded and tied up in bundles of five hundred; the same process gone through with each signature until the book was completed. The sheets were then gathered into book form, taken to the smashing machine and smashed, and the book was then ready for sewing.

"In the Jones process the sheets came from the sheet-room direct to the folding machine; when they were folded they were placed in the Jones machine, five hundred signatures at a time, with smooth-finished oak boards of an inch thickness placed at each end, the outside edges of the boards being rounded off. The pressure was then applied, the required amount being obtained; a heavy cord was placed both ways around the five hundred signatures, the
201 pressure relieved, and the signatures stored away until the completion of the book, thus doing away with the hanging of the sheets and all of the handling as described in the process with fullers-boards and standing press."

The defendant, being examined as a witness, states, on page 3 of the auditor's record, that in his business from 1883 to 1893 he employed a smashing machine to do the work which, after September, 1893, he did upon the infringing machine, and states in the same connection that there was but little saving in money by the use of the latter over the former, but considerably greater in convenience, owing to the greater ease in handling the machine-compressed bundles over those tied by hand. On page 6 of the auditor's record the same witness states that a smasher is used in the operations of binding after the sheets have been gathered and collated into books, and described the manner in which a smasher is operated and used as follows:

"The bunch of sheets are placed on a large board of pasteboard and another pasteboard placed on top of the bunch, and the combination is slid in between the rising bed and stationary head of

the machine, and receives a pressure at each revolution of from thirty to one hundred tons, being allowed to receive two or three of these pressures generally and then removed, the length of each pressure being about three or four seconds and not exceeding a quarter of a minute."

The witness Suydam testifies in relation to the use of the smashing machine, and, among other things, on page 22 of the auditor's record he testifies that if the sheets were folded, gathered, tied up in bundles in the old way until ready for use, and then subjected to the action of the smasher that the type indentations would not be removed, and gives his reasons for that statement. He also, on page 24½ of the auditor's record, states that, in his judgment, based upon his experience, his knowledge of the use of such machines, and of what is necessary for the removal of type indentations, that he is positive that a smasher is not a practically operative machine for such purpose.

The plaintiff Jones, examined as a witness, testifies, on page 28 of the auditor's record, that the removal of type indentations from printed sheets by use of a smasher is an utter impossibility; that he is familiar with the use of a smasher, and states the details of that familiarity, and then proceeds in reply to question 14 to state why a smasher would not perform the work of removing type indentations from printed sheets.

It is contended that what was known as the Palmer press was, during the period covered by this accounting, open to the public use and was adequate to produce a result equally beneficial and advantageous with that of the Jones invention. It appears from the proof that this press was not capable of dry-pressing; that it was useful in the bindery for bundling and storage of sheets which had already been through the operation of dry-pressing, and that the packages or bundles made by the use of that press were not in the convenient, safe, and protected form as the result of the operation of the Jones process.

202 It is also contended and appears in proof that during the period covered by the accounting there was in existence a press known as the Gordon press, which to a certain extent was capable of performing some of the material operations of the Jones invention, but it also appears that this press was not capable of use for such printing as was required from the defendant as public printer for the State, the Gordon press being only useful for light printing, such as letter-heads, circulars, and similar printing.

It is testified to by several of the witnesses that the only process known generally prior to the Jones signature press that would remove the indentations of type was the old process of laying the sheets between fuller-boards and pressing them. This statement is made by the witness Thomas B. Penicks, a bookbinder in the Government Printing Office, who was superintendent of the folding-room of the Government Printing Office for 25 years. On page 74 of the plaintiffs' printed record his testimony on this point will be found.

The plaintiff Jones also testifies on this point, commencing on

page 26 of the auditor's record. Having already testified to his means of knowledge of the printing and bookbinding arts during the period from 1844 to 1883, he states in reply to a further question that he has kept up since the latter date his knowledge of the said arts by visiting establishments and through trade publications to which he subscribes, in both of which directions he kept up continual watchfulness to ascertain whether any new process was discovered for the operation of removing type indentations or, as so called, dry-pressing; that he was continuously taking the principal journals of the book trade published in this country and those of England; that he had found no process mentioned nor had he seen any other process excepting the pressing between fuller-boards, as before described, and his own; that there was but one modern process, which was the pressing of the sheets between fuller-boards, and no older processes as cheap and practicable as that.

It is abundantly shown that what was known as the fuller-board process was the operation or method generally used down to the time of the Jones invention, and, exclusive of the use of that invention, the process generally used during the period covered by this accounting. The plaintiff having established this fact satisfactorily, I hold it to be incumbent upon the defendant to assume the burden of proving that there were other processes or means open to public use and adequate to obtain results equally beneficial with those obtained by the use of the plaintiff's invention; this the defendant has failed to do.

I therefore find that the only means open to the public during the period from September, 1893, to February 10, 1895, and adequate to obtain results equally beneficial with those obtained by the use of the plaintiff's invention was the process known as the fuller-boards process, described more in detail as follows:

When the printed sheets taken from the press reached the
203 drying-room they were hung upon rods for drying. When dry they were taken down and brought into the folding-room and placed between fuller-boards three or four sheets at a time, then placed under the hydraulic stamping press, and that press run up to its full capacity, the sheets remaining in that pressure usually during the night, after which the pressure was taken off, the press emptied of fuller-boards and sheets, the sheets taken out from between the fuller-boards, then taken to the folding machine, and, after being folded, tied up in bundles of 500, the same process being gone through with each signature until the entire book was completed, when the sheets were placed on the table and gathered into book form; from there taken to the smashing machine, and after being smashed the books were ready for sewing.

I next proceed to ascertain whether the use of the plaintiff's invention resulted in a saving of cost as compared with the said fuller-board process. I find from the evidence that the work of the latter process, as I have above described it, required the labor of five different persons—one for hanging up and taking down the sheets, two for placing them on the fullers-boards, one for tying them in

bundles of 500 each, and one for mashing and running up the hydraulic press. This enumeration of the labor is exclusive of the work of folding and gathering. See the testimony of Suydam, on pp. 10 and 11 of the Aud. Rec. The same witness, on page 11, in reply to a question as to the cost of the operation of dry-pressing printed sheets by the fuller-board process, states that, estimating the wages of the persons employed at the rate of $3 per week for each, the cost would reach 29 cents per thousand signatures. On pp. 29 and 30 of the Aud. Rec., the plaintiff Jones, testifying, states that, taking into consideration the extremely low rate of wages paid and the cheap class of labor used in the process, the dry-pressing by fullers-boards, including the smashing, would cost about 27 cents per thousand sheets, and he proceeds to give in detail the calculation through which he reaches that result. Comparing this calculation with the other evidence as to the amount of labor required in the processes through which the paper passes in being so dry-pressed, I find his detail calculation correct, and without repeating it here adopt it as the basis of my finding, that the dry-pressing by means of the fuller-board process cost not less than 27 cents per thousand sheets.

Calculating the 10,500,000 sheets treated by the defendant by the means of the infringing machine at the rate of 27 cents per thousand, I have the actual cost of the entire work if it had been performed by means of the fuller-board process. As against this I put the actual cost of the labor employed in operating the Jones process and reaching the same results of dry-pressing, being, as is testified to by the defendant, one-fifth of the service of a boy whose wages were $3.50 per week. I find the period covered by this accounting taken as of the 1st of September, 1893, and ending on the 10th of February, 1895, to be 75 weeks. As the time of the boy other than the one-fifth appropriated to the Jones machine was devoted
204 to other of the defendant's work, I take one-fifth of these wages as the cost of operating the infringing machine. Deducting this amount from the entire cost as ascertained above, I have the net saving to the defendant by the use of the infringing machine.

The plaintiff claims a further advantage gained by the defendant by the use of the infringing machine in the item of the saving of waste paper. It appears that the State in furnishing to the defendant paper for its printing allowed 28 sheets per thousand extra for waste, and that any saving out of this allowance became the property of the defendant under his contract. It appears in proof that the waste by the fuller-board process was about 10 sheets per thousand, while by the Jones process it did not exceed one sheet per thousand, a saving of 9 sheets per thousand, or, as the evidence further shows, a total of 11,820 pounds, treating the paper as 60 pounds to the ream, and its market price, as testified to by R. A. Johnston, paper dealer, as 6 to 7 cents per pound, the apparent saving to the defendant would be the quantity as above stated in weight at the rate of at least 6 cents per pound.

In the absence of any express proof showing whether the defend-

ant made sale of this paper so saved, I am compelled to assume that there was a saving to him or gain at the rate of 9 sheets per thousand, aggregating the weight of 11,820 pounds, which were of value to him of at least six cents per pound.

A further contention of the plaintiff is that there was to the defendant a saving in machinery; that the work accomplished by him in the operation of dry-pressing these printed sheets, if performed by the process described as the fuller-board process, would have required the service of at leave five presses during the period of this accounting; that presses of the required capacity, including the pumps and exclusing other connections, would have cost in 1893 $960 each, aggregating for the five presses the sum of $4,800. It is claimed by the plaintiffs that as the work if done and performed by that process would have required an investment of this sum of money, which was saved to the defendant by the use of the infringing machine, he is properly and lawfully chargeable with the interest on that sum during the period covered by the account.

I am unable to agree with the counsel for the complainant in this contention. The rule as laid down uniformly by the courts in cases of accounting for gains, profits, and advantages derived by the infringer by the use of the infringing machine or process is that the gains, profits, or advantages must be established by affirmative proof produced by the plaintiff; that this proof must be definite and precise, with nothing left to implication or intendment. There are several defects in the proof offered to establish the assertion of the plaintiff on the point under consideration. It does not satisfactorily appear that the work of dry-pressing the 10,500,000 printed sheets by the fuller-board process would have required the number of machines asserted by the plaintiff, and even if it was, it does not appear that the defendant would have been compelled to pur-
205 chase five machines or pay for them in money the amount estimated. In short, the testimony is not such as I think the rule laid down by the courts requires to authorize me to charge the defendant with the interest on this sum of $4,800 as a saving or advantage.

In the schedule hereto annexed I have stated the savings of the defendant by the use of the Jones process by the infringing machine as compared with the only other means then open to the public and adequate to obtain an equally beneficial result, being the two items I have above described, the saving in cost of labor and in the waste of paper.

I find that the defendant has realized advantage in the way of savings by the use of the machine and process described in claims 1, 2, 4, and 5 of the letters patent No. 204,741 as savings in cost of labor, $2,782.50, and as savings in waste of paper, $709.20, being a total savings of $3,491.70.

I do not find in the cause evidence sufficient to enable me to assess the damages suffered by the plaintiffs by reason of the defendant's infringement. Plaintiff has produced evidence tending to show the selling price of the Jones machine or press and the cost of labor and material employed in the construction of such machine.

It is contended by the defendant that this is not sufficient; that the cost of the machine or press includes not only the value of the labor and material, but its fair proportion of the expenses of the plaintiff's business, as to which there is no proof in the cause. In the recent case of The Fenton Metallic Manufacturing Co. *v.* The Office Specialty Manufacturing Co. I have had occasion to consider this question and to hold that upon the authorities the business expenses of the plaintiff should be included in the item of cost of the patented article. This rule is laid down by Robinson on Patents repeatedly and is sustained by a number of cases in the Federal Reports. In the condition of the proof here I am unable to report damages suffered by the plaintiffs.

JAS. G. PAYNE, *Auditor.*

SCHEDULE A.

Account of Gains, Profits, and Advantages which have Accrued to the Defendant from the Use of the Machine or Practicing of the Process Described in Claims One, Two, Four, and Five of the Letters Patent.

Cost of dry-pressing by the fuller-board process:		
10,500,000 sheets at 27 cents per thousand.....	$2,835.00	
Cost of said operation by the process of the said patent—labor of one boy one-fifth of the time for 75 weeks at wages of $3.50 per week:		
Entire wages.....	$262.50	
One-fifth.....	52.50	
Saving in cost of labor.....		$2,782.50
206 Saving in waste of paper, 9 sheets per thousand, 197 reams, 11,820 pounds, at 6 cents per pound..		7,709.20
Total savings.....		$3,491.70

JAS. G. PAYNE, *Auditor.*

Exceptions to Auditor's Report.

Filed April 8, 1897.

In the Supreme Court of the District of Columbia.

J. W. JONES and THE W. O. HICKOK Manufacturing Company *vs.* CLARENCE M. BUSCH.	In Equity. No. 15391, Docket 36.

Exceptions to auditor's report.

Exceptions taken by the defendant to the report made herein by James G. Payne, auditor, to whom this cause was referred.

First. For that the auditor has disregarded the order of the court referring the case to him, and the patent in suit, so far as the fifth claim is concerned, by considering testimony and basing his conclusions upon a process wholly outside of the patent.

Second. For that the auditor has assumed that the fifth claim of the patent, which is "for treating folded sheets," includes also other steps not specified in the claim, to wit:

1. The step of hanging the unfolded, wet, printed sheets.
2. Removing said sheets from the drying poles and placing them between fuller-boards.
3. Placing such sheets and fuller-boards in an hydraulic press.
4. Subjecting said unfolded sheets to pressure and allowing them to remain for a certain number of hours in the press.
5. Removing the sheets and fuller-boards from the press and separating the fuller-boards from the sheets.
6. Folding the dry sheets.

none of which steps are specified in the claim or referred to in the patent.

Third. For that the auditor has reported a saving of paper and of handling wet printed sheets and preparing them for the folding machine, whereas the fifth claim of the patent has only to do with folded sheets.

Fourth. For that the auditor reports savings by the use of the process of the fifth claim over processes in use prior to Jones' invention, and disregards the testimony of the witnesses Busch, Grier and Suydam that during the time of the alleged infringement no fuller-boards were necessary in dry-pressing and no savings made by the use of the Jones process.

Fifth. For that the auditor has assumed, without proof,
207 that the "dry-pressing" referred to in claim 5 means removing type indentations, instead of, as the claim specifies, to fix and keep the pressed sheets smooth.

Sixth. For that the auditor has based his report upon the assumption that the process of the fifth claim is a mere function of the ma-

chine shown in the patent in suit and the other later patents, which were improvements upon the machine shown in the patent.

Seventh. For that the auditor has reported more than nominal damages, as he should have done, the complainant having failed to apportion the advantages derived from the use of the machines in carrying out the process, the comparison, from the evidence, being with the improved hydraulic machine, which is the subject of several patents to the complainant, and the defendant's machine, which is also an improvement upon all of the Jones machines, and, as such, patented.

Eighth. For that the auditor disregarded the testimony of complainant and his witnesses to the effect that no damages would have accrued to either of the complainants had defendant bought the Jones machine, which carried with it a license to use the process, instead of the infringing machine, the difference in the cost being but $100.00 for a machine, including the improvements of later patents than that upon which this suit is brought.

Ninth. For that the report is based upon the ruling in Tilghman *vs.* Proctor, 125 U. S., page 136, in which the process was a purely chemical process, irrespective of mechanical appliances, while the steps in the Jones patent, as set forth in the patent and testified to by the witnesses, is purely mechanical.

GEO. J. MURRAY,
Solicitor for Defendant.

(Endorsed:) In equity. No. 15391, docket 36. Sup. court, Dist. of Columbia. J. W. Jones *et al. vs.* Clarence M. Busch. Exceptions to auditor's report.

Decree.

Filed January 19, 1899.

In the Supreme Court of the District of Columbia.

J. W. JONES and W. O. HICKOK MANUFACTURING Company
vs.
CLARENCE M. BUSCH.
} No. 15391. Equity.

This cause came on to be heard upon the exceptions of the defendant filed on the 16th day of February, 1897, and on the 8th day of April, 1897, to the report of the auditor, filed herein on the 26th day of March, 1897, and on the defendant's motion filed on the 19th day of December, 1898, to vacate the interlocutory decree passed herein on the 11th day of February, 1896, and the same were argued by the respective counsel and considered by the court.

208 It is therefore this 19th day of January, 1899, by this court and the authority thereof adjudged, ordered, and decreed that the said exceptions and the said motion be, and the same are hereby,

overruled, and the said report of the auditor be, and the same hereby is, finally ratified and confirmed.

A. B. HAGNER,
Associate Justice.

Final Decree.

Filed April 4, 1899.

In the Supreme Court of the District of Columbia.

J. W. JONES and THE W. O. HICKOK MANUFACTURING COMPANY
vs.
CLARENCE M. BUSCH.
No. 15391, Equity Doc. 37.

Final decree.

This cause having heretofore come on to be heard upon the exceptions of the defendant, filed on the 16th day of February, 1897, and on the 8th day of April, 1897, to the report of the auditor, filed herein on the 26th day of March, 1897, and on the defendant's motion, filed on the 19th day of December, 1898, to vacate the interlocutory decree passed herein on the 11th day of February, 1896, so far as the fifth claim of the patent in suit is concerned, and an order having been entered on the 19th day of January, 1899, by this court, in which it was adjudged, ordered, and decreed that the said exceptions and the said motion be overruled and the report of the auditor be finally ratified and confirmed, and the case now coming on for final decree this 4th day of April, 1899—

It is ordered, adjudged, and decreed that the said decree of February 11th, 1896, and said order of January 19th, 1899, be, and the same are hereby, confirmed and made final, and that the said defendant pay to the complainants the sum of $3,491.70, with interest from the 26th day of March, 1897, the date when said report was submitted to the court.

It is further ordered, adjudged, and decreed that the said defendant pay to the complainants the costs in this suit, amounting to $293.05, and that said complainants have judgment and execution for such costs and for the sum above decreed, with interest to be paid by the defendant to complainants aforesaid.

A. B. HAGNER,
Associate Justice.

(Endorsed:) Jones *et al. vs.* Busch. Final decree (amended).

209 *Petition for Appeal.*

Filed April 19, 1899.

In the Supreme Court of the District of Columbia.

J. W. JONES and W. O. HICKOK MANUfacturing Company, Complainants,
vs.
CLARENCE M. BUSCH, Defendant.
} In Equity. No. 15391.

Petition for appeal.

To the honorable the judge of the supreme court of the District of Columbia:

The above-named defendant, Clarence M. Busch, conceiving himself aggrieved by the interlocutory decree entered on or about the 11th day of February, 1896, in accordance with a decision filed on or about January 30, 1896, the order signed January 19, 1899, and the final decree entered on April 4th, 1899, in the above-entitled cause, does hereby appeal to the Court of Appeals of the District of Columbia from said decree, and prays that this his appeal may be allowed; that a proper citation may be issued and served upon the complainants in said cause or their solicitors, and that a transcript of the record, proceedings, and evidence in said cause upon which said decree was founded, duly authenticated, may be transmitted with this appeal to the said Court of Appeals.

GEO. J. MURRAY,
Defendant's Solicitor.

CHAS. E. RIORDON, *Of Counsel.*

Appeal allowed and bond for costs fixed at $500.

A. B. HAGNER,
Justice Sup. Ct., D. of C.

Assignment of Errors.

Filed April 19, 1899.

In the Supreme Court of the District of Columbia.

J. W. JONES and W. O. HICKOK MANUfacturing Company, Complainants,
vs.
CLARENCE M. BUSCH, Defendant.
} In Equity. No. 15391.

And now comes the above-named defendant, by his solicitor, and presents, with his accompanying petition for an appeal from the final decree rendered in this cause, the following assignment of errors:

First. The findings of the court are against the clear weight of

the evidence, and the decree based thereon is against the law
210 and the facts and is inequitable and unjust for the reasons hereinafter stated and for other reasons apparent on the face of the record.

Second. The court erred in holding on interlocutory decree that the letters patent, No. 204,741, granted to complainant Jones June 11, 1878, being the patent in suit, were good and valid in law, and that the legal title to said patent was vested in said Jones and his co-complainant, The W. O. Hickok Manufacturing Company.

Third. The court erred in finding and holding that the defendant infringed the 1st, 2nd, and 4th claims of said letters patent by the use of one machine used by him, and by further finding that the defendant infringed the 5th claim of said patent by practicing the process set forth therein on the machine covered by the 1st, 2nd, and 4th claims of said patent.

Fourth. The court erred in granting a perpetual injunction against the defendant, a mere user of one machine, eight months after the expiration of the patent in suit.

Fifth. The court erred in overruling the motion to vacate the interlocutory decree after the auditor had reported that the complainants had suffered no damage by reason of the defendant having purchased his machine from another instead of from the complainants, when the undisputed testimony before the auditor showed that every machine purchased from the complainants carried with the sale of the machine a license to use the process of the 5th claim of the patent free of royalty.

Sixth. The court erred in overruling the exceptions to the auditor's report awarding as profits and damages $3,491.70 by the use of the machine covered by claims 1, 2, and 4 of the said letters patent No. 204,741 and the process practiced on said machine and covered by claim 5, when the auditor reported no damages by reason of defendant's infringement in purchasing the alleged infringing machine.

Finally. The court erred in holding that complainants were entitled to interest on the amount of damages found by the auditor from the date of submission by the auditor of his report to the court.

Wherefore the appellant, Clarence M. Busch, prays that the Court of Appeals of the District of Columbia will proceed to hear the said cause anew, and that the said decree of the supreme court of the District of Columbia and every part thereof may be reversed and a decree made reversing said decree with costs or such other decree as to the said Court of Appeals may seem fit.

GEO. J. MURRAY,
Solicitor for Appellant.

CHAS. E. RIORDON, *Of Counsel.*

(Endorsed:) Copy. Petition for appeal & assignment of errors.

Memorandum.

April 19, 1899.—Bond for appeal filed.

211 Copy.

Waiver of Citation.

Filed May 18, 1899.

In the Supreme Court of the District of Columbia.

J. W. JONES and W. O. HICKOK MANUfacturing Company, Complainants,
vs.
CLARENCE M. BUSCH, Defendant.
} In Equity. No. 15391.

In the above-entitled cause appeal having been taken to the Court of Appeals of the District of Columbia by the defendant, Clarence M. Busch, from a decree against him in the supreme court of the District of Columbia, I, in behalf of the complainants, hereby waive service of citation *in re* said appeal.

M. W. JACOBS,
Attorney for Complainants.

May 17th, 1899.

(Endorsed:) Copy. In equity. No. 15391. Jones *et al. vs.* Busch. Waiver of citation.

Supreme Court of the District of Columbia.

UNITED STATES OF AMERICA,
District of Columbia, } *ss:*

I, John R. Young, clerk of the supreme court of the District of Columbia, do hereby certify the foregoing pages, numbered from 1 to 155, inclusive, to be a true and correct transcript of the record, as prescribed by rule 5 of the Court of Appeals of the District of Columbia, in cause No. 15391, in equity, wherein Joshua W. Jones *et al.* are complainants and Clarence M. Busch is defendant, as the same remains upon the files and of record in said court.

Seal Supreme Court of the District of Columbia.

In testimony whereof I hereunto subscribe my name and affix the seal of said court, at the city of Washington, in said District, this 20th day of May, A. D. 1899.

JOHN R. YOUNG, *Clerk.*

Endorsed on cover: District of Columbia supreme court. No. 903. Clarence M. Busch, appellant, *vs.* Joshua W. Jones *et al.* Court of Appeals, District of Columbia. Filed May 22, 1899. Robert Willett, clerk.

212 *Addition to Record per Stipulation of Counsel.*

Court of Appeals, District of Columbia, October Term, 1899.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK MANUFACTURING Company. } No. 903.

Filed September 21, 1899.

213 In the Court of Appeals of the District of Columbia.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES ET AL. } No. 903.

Court of Appeals, District of Columbia, October Term, 1899.

CLARENCE M. BUSCH, Appellant,
vs.
J. W. JONES and THE W. O. HICKOK MFG. CO., Appellees. } No. 903.

It is hereby stipulated and agreed by and between counsel for the parties hereto that the accompanying pages, 8 to 26, of defendant's (appellant's) printed record, in the supreme court of the District of Columbia, may be printed and form part of the transcript of record for this court, the same having been inadvertently omitted from the transcript furnished, said pages covering stipulations, testimony of Charles G. Schrank, Edmund H. McKee, Francis E. Davis, and Alexander Stewart, and the notary's certificate.

CHAS. E. RIORDON,
Of Counsel for Appellant.
M. W. JACOBS,
Counsel for Appellees.

September 19, 1899.

In the Supreme Court of the District of Columbia, Sitting in Equity.

JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Co.
vs.
CLARENCE M. BUSCH. } No. 15391, Docket 36.

It is hereby stipulated and agreed by and between the parties hereto, that the testimony and proofs to be taken on behalf of both parties hereto may be taken orally before any duly qualified notary public, with the same force and effect as though taken before a regular examiner of this court, and an order may be entered at any time by either party upon filing this stipulation, appointing such notary public or notaries public as may act as special examiners.

It is further stipulated and agreed that the usual printed Patent Office copies of all letters patent offered in evidence by either
214 party hereto may be received, marked and read with the same force and effect as though the same were duly certified copies.

Dated September 12, 1894.

M. W. JACOBS,
Solicitor for Complainant.
O. M. HILL,
Solicitor for Defendant.

The Supreme Court of the District of Columbia, Sitting in Equity.

JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Co.
vs.
CLARENCE M. BUSCH. } No. 15391, Doc. 36.

It is hereby stipulated and agreed by and between the parties hereto that the records in the above-stated case, and also the exhibits offered in evidence therein, may remain in the custody of the respective counsel, to be filed, however, upon the request of the opposite party; and exhibits to be loaned to either side, for the purposes of this case, upon reasonable notice.

Dated September 24, 1894.

M. W. JACOBS,
Solicitor and Counsel for Complainants.
O. M. HILL,
Solicitor and Counsel for Defendant.

Supreme Court of the District of Columbia, Sitting in Equity.

JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Company
vs.
CLARENCE M. BUSCH. } No. 15391, Doc. 36.

Taking of testimony, offering evidence in the above-entitled cause before William M. Stewart, Jr., No. 400 Chestnut street, Philadelphia, Pennsylvania, commencing Friday, April the 26th, A. D. 1895, on behalf of respondent-, pursuant to agreement of parties.

Present: M. W. Jacobs on behalf of the complainant, and George J. Murray on behalf of respondents.

CHARLES G. SCHRANK, a witness produced on behalf of respondent-, being first duly sworn, deposes and says in answer to interrogatories propounded to him by Mr. Murray, as follows:

Q. 1. State your name, age, residence and occupation.

A. Age 63; 1303 Moore street, Philadelphia; occupation, at present, book agent.

Q. 2. Please state how you were employed during the year 1874, and prior thereto.

215 A. I was employed in the year 1874 as a bookbinder. I was in the employ of John Palmer, the man I served my apprenticeship with.

Q. 3. How long prior to 1874 were you in the employ of John Palmer? Where was his place of business when you were first employed by him?

A. I was employed by him first in 1848 at 517 Minor street, Philadelphia.

Q. 4. State how long you were continuously employed by him, and where his place of business, if he had different places.

A. From 1848 up; I was 37 years in his employ, but not constantly. He moved from 517 Minor to the northwest corner of Sixth and Minor streets. Then afterwards moved from there to the southwest corner of Sixth and Walnut streets, from there to the Tatham building, Nos. 224, 226, 228, S. Fifth, then across the street to the Wiler building on the east side of Fifth street, from there I assisted in the removal of the machinery to the Tatham building again on the 19th of May.

Q. 5. Will you please state what means was employed by Mr. Palmer, or in his establishment, for pressing, bundling or tying up signatures while you were in his employ?

A. They had a press there with a screw in it of about an inch and a quarter with blocks with slots in for the purpose of taking up the slack of the strings after the pressure was applied.

Q. 6. State when that press, such as you have described, was first put in use by Mr. Palmer, if you know.

A. He had the press made when I was out of his employ in the year 1873, but I had used the process on another press, that is blocks previous to that, which I had seen in use at another place of Mr. George W. Story, who carried on the process of folding books at the northwest corner of Third and Walnut streets. When I was about 15 years of age I was errand boy for John Palmer. I introduced it into Mr. Palmer's shop in 1863.

(So much of the foregoing answer as relates to the use of the alleged process or press in the establishment of George W. Story, objected to because not set up in the answer.)

Q. 7. State how you come to introduce that press in the establishment of Mr. Palmer, in 1863?

A. I used it in tying up those signatures and bundles of books. I found I could not tie them tight enough with the process he had, and I proposed to him to have these blocks made, that I had seen in use in Story's place. I had them made about 6 x 10 inches, and one inch and a half thick, with a grooved slot in them so that the slack of the twine could be taken up after the pressure had been applied, and the cause of it was that the bundle would be tight.

Q. 8. Were those blocks used on a press the same, or different from the one that was employed in 1873?

A. They were used on a press called the single-screw Stuart press, a press similar only with heavier screws.

216 Q. 9. How recently have you seen the press which you say was used by Mr. Palmer in 1873 or 1874?

A. I think it was last Thursday, April the 18th, 1895, in Russell & Bates' bindery at 509 Locust street, Philadelphia.

Q. 10. State whether it was in the same condition when you saw it last as in the year 1873 or 1874, and if there was any changes, describe them.

A. I think the bottom cast-iron block was broken, and they are now and have been using one of the original blocks of wood.

Q. 11. Please examine this sketch I now hand you, and state what it represents.

A. It represents the press that was used for that purpose.

Q. 12. Do you notice any differences between the sketch and the press now at Russell & Bates' place, 509 Locust street?

A. It is the same press which I have removed twice. I removed it first from the Wiler building into the Tatham building in 1874, and in 1880 we removed it into the annex of the Tatham building.

(The sketch referred to is herewith offered in evidence, and marked as "Respondent's Exhibit Sketch of Palmer Press.")

Q. 13. What time was this press that was used at the Palmer bindery, and represented by this sketch as the Palmer press, fitted with iron blocks as spoken about?

A. About the year 1873, when he had it built.

Q. 14. How are you enabled to state positively that this press was made in 1873, and moved into the Tatham building in May, 1874?

A. I went back to Mr. Palmer's employ in February, 1874, and on the 19th of May he started to move the bindery to the Tatham building out of the Wiler building. On the afternoon of the 20th of May, in moving one of the presses I slipped on the floor and fell, and cut my cheek which gave me a black eye. On that night my mother died, 20th of May, 1874; I had to go to the funeral with a black eye, which I did not like to do, but I had to do it.

Q. 15. How long after 1874 did you continue to work for Palmer?

A. I think in 1882 or 1883 he died, and I then worked for his widow up to 1888.

Q. 16. How extensively was this press used in the bindery while you were employed there?

A. It was employed for two or three days in the week, and then would stand idle for a day or so.

Cross-examined by Mr. JACOBS:

Q. 17. Please state a little more particularly than you have done the construction of the Palmer press, giving the dimensions of the several parts as nearly as you can recollect them.

A. I think it is about 8 feet high on the side pieces and about 10 inches wide and the side timbers are about 2 inches thick. The cross-pieces are about 5 feet, about the same width and thick-
217 ness of the side pieces, with a screw of about one inch and a quarter. At the end of the screw there is attached an iron

block, 6 or 7 inches wide by 10 or 11 in length, with slots in it for the twine to slip through, and a block similar at the bottom to take the place of an iron one that was broken. There was a bar with a ball on each end to run the screw down with, which I think was about three feet in length, but I never measured it.

Q. 18. Was the lower block fixed or removable?

A. It was removable.

Q. 19. What were the dimensions of the slots to which you have referred?

A. I think they were about $\frac{3}{8}$ of an inch wide; I know they were not a full half inch. I think they are about $\frac{1}{4}$ of an inch in depth.

Q. 20. Apart from the slotted blocks, the press was an ordinary upright press, was it not?

A. It was used for no other purpose than tying up.

Q. 21. Apart from the purpose for which it was used, and the fact that it contained slotted blocks, it was an ordinary upright, hand-screw press, was it not?

A. It was an ordinary press, and was never used except for tying up.

Q. 22. Please describe now the manner in which the press was used.

A. First in using it, the strings were laid in the bottom block or platen, a piece of paper laid on top of the string, a piece of pasteboard laid on top of the paper, and the gathered books or signatures piled up in bundles of ten, and a piece of pasteboard on top and a heavy paper on top again; string was then brought over the top of the pile; the top block was then screwed down and the pressure applied. The slack of string was then taken up and the bundle tied and removed.

Q. 23. For what purpose were the pieces of pasteboard placed at the top and bottom of the bundle?

A. To keep the books straight and to prevent the twine from cutting into the signatures and destroying them.

Q. 24. The sheets were gathered in books before being placed in the press, were they?

A. They were.

Q. 25. How were the books arranged in the bundle with reference to each other?

A. They were piled up back and front or "head and tail," as we use the expression in the book trade, so that they could be easily separated.

Q. 26. Would it have been just as easy and convenient to have piled them all one way?

A. No, sir.

Q. 27. Why not?

A. One side of the bundle would have been so much higher than the other on account of the fold and they would not have made a straight bundle.

218 Q. 28. Were any guides of any kind used for piling the books in the press?

A. We only used our eye in piling, and we would set the block

under the other one as near as we could, and when the bundle was removed we would straighten it up by knocking it down on the floor.

Q. 29. Did the bundle straighten easily by being knocked on the floor?

A. It did when I tied them.

Q. 30. The bundles then were not tied so tightly as to refuse to yield when knocked on the floor?

A. They were not.

Q. 31. Was the top platen held by any means from following the screw when the latter was turned?

A. As far as I understand Mr. Jacobs' question, it was held with one of the hands. You would start the ball around and hold it. It was a crude affair at first.

Q. 32. For what purpose were the books put into bundles in the Palmer establishment, as you have described?

A. For their preservation and to save space in storage until they went to be bound and delivered to the publishers, and they stored them in their store-rooms. Among whom were the firm of T. & J. W. Johnson, law publishers, 535 Chestnut street, Messrs. Kay & Bro., on Samson street, between 7th and 8th streets, on the south side, and then we stored some for W. & O. H. Morrison, on the sixth floor of the Tatham building.

Q. 33. How were the sheets delivered at the bindery?

A. They were tied up in bundles and had been pressed by the regular printers' process through fullers-boards or printers' boards. The printers used a hydraulic press.

Q. 34. This pressing between fuller or printers' boards by means of hydraulic pressure, of which you speak, was for the purpose of removing the indentations, was it?

A. Yes, sir, the indentations of the type.

Q. 35. And this was done, as I understand you, by the printers before the sheets were delivered at the bindery?

A. Yes, sir.

Q. 36. The Palmer press then was not used for the purpose of removing indentations, but merely for the purpose of bundling the sheets for storage. Is that correct?

A. Yes, sir, just for making a neat bundle out of it for storage.

Q. 37. What kind of pasteboard was used on the ends of the bundles?

A. They were principally backs of old books, which had been sent there to be rebound and the leather was attached to them, and also in the regular binder boards.

Q. 38. I suppose you used any kind of pasteboard that was conveniently at hand and would protect the sheets from cutting by the cord?

A. That is right.

(Recess from 12.30 to 1.30 p. m.)

219 Redirect by Mr. MURRAY:

Q. 39. Have you since recess measured the press you have been testifying about at the establishment of Russell and Bates, 509 Locust street?

A. I have.

Q. 40. Please give the measurements of the different parts, and to make your answer more clear will you please refer to the Exhibit "Sketch of Palmer Press," and indicate on said sketch by reference letters the parts you refer to in your answer.

A. The height of the sides which I have marked "A" are 7 feet 11 inches; thickness is 2 inches; width between uprights of cross-pieces, which I have marked "B," are 44 inches, inside measurement; width of uprights, 8½ inches; width of cross-pieces, same, except the top cross-piece, which is 11 inches wide and 3½ inches thick; width of cross-slot in the iron platen. one-half inch; slot in wood block, ⅞ of an inch; the screw is a scant 1¼ inch; the length of bar is 38 inches; the size of platens, 11½ long by 7¾ inches in width. The above-mentioned bar is taken from out to out of the balls.

Q. 41. After having again examined the machine and having the sketch before you do you notice any differences between the machine and the sketch excepting that the top bar is broken away in the sketch to expose the nut?

A. That is the only difference.

Q. 42. Will you state the depth as well as the width of the cross-slots in the upper and lower platens?

A. The depth in the iron slot, which is the upper, is ⅞ of an inch. The lower one, which is of wood, is about a half an inch.

Recross-examination by Mr. JACOBS:

Q. 43. The lower platen which you examined and measured today is not the same that was on the machine in 1874, is it?

A. No, sir. It is not. The original one was broken and was made of iron, and the one that is on today is not the one which was on when I made use of the press.

Re-redirect by Mr. MURRAY:

Q. 44. State how the lower platen which you say is on the machine today corresponds with or differs from the platen which you say you used upon the same machine in 1873 and 1874.

A. It differs in being wood and the slot being larger than it was in the original, which was iron.

Q. 45. Then, as I understand you, both platens were iron when you used it, and can you state whether or not they were cast from the same pattern?

A. They were to the best of my knowledge.

Re-recross-examination by Mr. JACOBS:

Q. Of your own knowledge, I suppose you are not able to say anything about the casting of the platens or the patterns from which they were cast, are you?

220 A. I cannot, as I was not in Mr. Palmer's employ when the castings were made, and afterwards came in his employ and saw the press complete.

CHAS. G. SCHRANK.

Sworn and subscribed to before me this 26th day of April, 1895.

WM. M. STEWART, JR.,
Notary Public.

And EDMUND H. MCKEE, being duly sworn, deposes and says, on being examined by Mr. Murray:

Q. 1. State your name, age, residence, and occupation.

A. Edmund H. McKee, Prospect street, Roxborough; age, 74 years; bookbinder by trade.

Q. 2. How were you employed, and for whom, during the years 1873 and 1874 and prior thereto?

A. I was employed in the finishing department of the Palmer bindery. To explain that more definitely, by finishing is doing the gold-work, the lettering of books and such things as that, that you may see on the various kinds of books, law books, morocco books or on all books, although the real name is known as bookbinder. Prior I was employed by Mr. Palmer, when he had his bindery on Minor street below Sixth. From there I went to the corner of Sixth and Minor with him, when he moved there. From there to the S. E. corner of 5th and Walnut Sts. From there to Mr. Tatham's large building on Fifth street above Locust street. From there to Mr. Wiler's building, which at that time was the firm of Wiler and Moss, the stair-rod manufacturer-, which was on Fifth street opposite to what is called Adelphi street. From there we went to Mr. Tatham's building again. From there into what I would suppose you would call the annex, at 509 Locust street. During all these years I was engaged by Mr. Palmer as a finisher. I have described the modes of finisher. I remained in the establishment until the death of Mr. Palmer. After his death Mrs. Palmer, the widow of the late John Palmer, took charge of the business, together with the son, but finally from disagreement she took charge of the business and carried on the same herself. I was still retained under her proprietorship as a finisher, and after she sold out I was still retained to do what job finishing there was to be done by the present proprietors, Russell & Bates, and still work there when there is anything to do, which is very seldom.

Q. 3. Are you familiar with a press for bundling and tying up signatures used by Mr. Palmer, and still in the establishment of Russell and Bates?

A. I have seen the press, believing it is the same press that was formerly occupied by Mr. Palmer in tying up signatures and books after the gathering of the books and then collating them, because it is necessary that books tied into bundles should be gathered so that after the book is gathered it has to be collated. The collating is in order to show that the book is complete by having all the signatures in that book.

221 Q. 4. Please describe the press that was used for bundling and tying up these books and signatures briefly.

A. It is a plain structure of two uprights of heavy planking, of a top piece, and then a lower planking across. These planking crosswise are to strengthen the uprights. The screw, as far as I know, that took hold on the middle piece between the uprights; the screw, looking at it occasionally, I was not able to see that as if I had been working at the tying up, as I had nothing to do with that process at all; it consists of a screw and the platen is attached to the screw and after the books are got between, papers are first laid on the bottom, and then a piece of pasteboard, and then the books are laid on top of this and another piece of paper on the top; then if they could find old sides enough of old books that were torn from books, for instance, books that were sent just for being rebound, they were saved for this purpose and put on top of the paper. After placing these on the top, this block was placed on the top of that, and the cords put through, and then they turned what I call the lever, but you call it the bar. As it neared the bundle it had to be guided by the hand so as to bring it down, in bringing it down, or they could bring it down square on the tops of the bundles. Then the pressure was put on, whatever pressure was deemed necessary, cords run through them tight and then were tied at the ends. Whatever little slack there might be there as the pressure was taken, the pressure being taken off, the books would rise, leaving the bundle tightened.

Q. 5. Please examine the sketch I now hand you marked "Respondent's Exhibit Sketch of Palmer's Press" and state how it corresponds with or differs from the press you have been describing.

A. This seems to correspond, except that the top is broken away and I suppose is to let the screw show, but that looks like the original press.

Q. 6. Can you state when this press that is now at the bindery of Russell and Bates was first put up and used at the bindery of John Palmer?

A. To the best of my knowledge and belief it was originally there in 1873 or 1874, I am not positive. I cannot be positive about that question; as to the best of my knowledge and belief.

Q. 7. Can you state whether or not this press was in use in Palmer's bindery before Mr. Palmer moved into the Tatham building?

A. My knowledge is that it was introduced when they were in the Tatham building, while he was in the Tatham building—to the best of my knowledge and belief.

Q. 8. Do you mean the first time that Mr. Palmer was in the Tatham building, or the second time?

A. I think it was the first time, but I cannot be positive.

Cross-examined by Mr. JACOBS:

Q. 9. When were you first employed by Mr. Palmer at his bindery?

222 A. I went to Mr. Palmer between 1849 and 1850. He then had his bindery on Sansom street, No. 517, I think.

Q. 10. And you continued in the employ of Palmer and his successors until a few months ago; is that correct?

A. I think during the period I was away for a year or two, when I worked for the Government, and then went back again, but since that time I have been off and on when there was any finishing to do, until last year, when I was sick for about three months. I am still engaged there when there is anything to do, with the parties who have the establishment.

Q. 11. Can you tell the date of the removal of Mr. Palmer's bindery from Minor street, below 6th, to the corner of 6th and Minor?

A. I cannot tell positively; it was about 1863, but it may have been a little later; outside of the machine here I could not say positive, as my memory is not as bright as it was.

Q. 12. As I understand it, the press, concerning which you have been testifying, was used merely for the purpose of tying up and bundling books after the sheets had been gathered and collated; is that right?

A. Yes, sir; I have never seen it used for any other purpose.

Q. 13. Can you give the date when Mr. Palmer moved to his bindery from the corner of Sixth and Minor streets to the corner of Fifth and Walnut streets?

A. I cannot give you the date.

Q. 14. Can you give the date when he moved from Fifth and Walnut streets to the Tatham building?

A. I cannot. I have never had any data. I never took any data. I never thought that anything would transpire to cause anything like this kind that would call for my memory of the bindery. I never charged my memory with it.

Q. 15. I suppose you do not know either when he moved to the Wiler building or to the Tatham building the second time?

A. I have nothing that I could give you to base any data upon, but I will state here that I never bothered about these things, and never had any cause to bother about them.

Q. 16. Can you give about the year that any of the movings occurred?

A. Could not say; I might come very early or very late; as I said, my mind was never charged with anything of that kind, as I never thought of having to use anything like this.

EDMUND H. McKEE.

Sworn and subscribed to before me this 26th day of April, 1895.

WM. M. STEWART, JR.,
Notary Public.

Adjourned until 10 o'clock a. m. April 27th, 1895.

223 Met pursuant to adjournment, April 27th, 10 a. m.
Present, the same parties as yesterday.

FRANCIS E. DAVIS, a witness produced on behalf respondent, being duly sworn, deposes and says, in answer to interrogatories propounded to him by Mr. Murray, as follows:

Q. 1. State your name, age, residence and occupation.

A. Francis E. Davis, 58 years of age; residence, 2154 North 27th street; occupation, bookbinder.

Q. 2. State how you were employed, and where, during the years 1870 to 1878?

A. From 1870 to 1872, I was foreman for John F. Bush, bookbinder, located Jayne's building, on Carter's alley, below Third, from that time to May, 1872; he was burned out at that time. After that we took a room on the fifth floor of Tatham's building, 5th street, above Locust street. We were there all that time from 1872 to 1878.

Q. 3. During the time that you were working for Mr. Bush in the Tatham building, where was the bindery of John Palmer located?

A. When we first went into Tatham's building, Mr. Palmer's bindery was on the other side of the street, but I do not know what the number was. As near as I can recollect, about 1874, we occupied the south side of the fifth floor, and about that time we moved in on the north side; and Mr. Palmer took the room we vacated. I could not say how long he was there; I know it was a year or two.

Q. 4. What, if any, means did Mr. Palmer have in his place for pressing and tying up signatures at the time he moved into the Tatham building, and during the time he was occupying rooms in that building?

A. He had a standing press that worked with an iron bar with two arms on it. They would fill that press with a certain number of sheets, a board on top and bottom, and tie the ropes around them two ways, and let up the press and take the sheets out.

Q. 5. Describe the lower platen upon which the pile of signatures rested and the upper platen which was brought down to compress the pile in that press?

A. I could not do that, I never knew it.

Q. 6. How did they get the strings around the pile to tie up the bundle?

A. I never examined the machine at all.

Q. 7. But you do know that the signatures were put in the press and the platen brought down to compress the pile of signatures, and then strings tied around the pile to hold it compressed when the upper platen was withdrawn, do you not?

(Objected — as leading.)

A. I do.

Q. 8. How recently have you seen that machine?

224 A. I have not seen it since they moved out of the building, it was there all the time Mr. Palmer and Mr. Busch occupied the building.

Q. 9. Do you think you would recognize the machine or a drawing of it if you were to see it now?

A. Well, I think I would.

Q. 10. I now hand you a sketch marked Exhibit of Palmer Press. Will you please examine that and state whether it is similar to or differs from the press used by Mr. Palmer at the time when he was in the Tathem building?

(Objected to as leading and because the proper ground has not been laid.)

A. Well, the standing of the press, it seems to me, is about as his was, and the mode of screwing down is exactly the same, but the blocks, top and bottom, I could not say anything about.

Q. 11. Do you know what the purpose of the slots of the top and bottom blocks in a press of this kind were used for?

(Objected to because the proper ground has not been laid for the question.)

A. To put a rope through for tying the bundle. It could not be tied any other way unless the slot was there.

Q. 12. You saw the press of Mr. Palmer used while he was in the Tatham building, did you not?

A. I did. We had to pass through his room to go to the elevator; he had a sawing-out machine between our door and this press; nearly every day I had to pass through there to go to the elevator, and saw a may tying up sheets there, and I would see the boy take the sheets from the press and take them to the sixth floor.

Q. 13. These were tied up while the bundles were in the press, were they not?

A. They were.

Q. 14. And you say that they could not be tied up unless the cross-slots were in the upper and lower blocks. Did you notice when the bundles were removed to be carried to the sixth story whether these blocks had cross-slots in them or not?

(Objected to as leading.)

A. That was my opinion, I did not notice it.

Q. 15. Have you seen a press for tying up signatures since the time you moved out of the Tatham building, which had blocks between which the bundles are compressed, which blocks are provided with cross-slots like these in the sketch shown you?

A. I have not.

Q. 16. Have you not one in your own establishment with the same kind of blocks for tying up signatures which was made under your order?

(Objected to as leading.)

A. I have a wooden one made under my order, which has
225 but one slot, that is cross-wise of the sheet, and ties but one way with one rope.

Q. 17. What suggested the idea to you of making that press with the slotted blocks and single cords for tying up bundles?

(Objected — as immaterial and irrelevant.)

A. I had the idea that we could not tie the rope sufficiently tight unless there was a slot in the block to let it slide through.

Q. 18. Did you get that idea from the press you saw at the Palmer place which you say strings were drawn through and tied tightly after the bundles had been compressed?

(Objected — as leading and assuming.)

A. Never did; never thought anything about his press.

Cross-examined by Mr. JACOBS:

Q. 19. How long were you working for Mr. John F. Busch?

A. About ten years.

Q. 20. From when to what time?

A. I think it was about 1870 when I went to work for him, I am not positive about it, I worked for him from that time until he died.

Q. 21. When did he die?

A. I worked for him that time until he died, I think it was about 1880.

Q. 22. For what purpose was the press concerning which you have testified used in the Palmer bindery?

A. Used for tying up folded sheets.

Q. 23. Was it used for dry-pressing or taking out the type indentations from the sheets?

A. It was not used for either.

Q. 24. Was the press, in your opinion, capable of being used for that purpose?

A. It was not.

Q. 25. How was dry-pressing or smooth-pressing done at that time in the trade?

A. I never saw any done in a bookbindery.

Q. 26. Where was it done?

A. It is usually done in a printing office.

Q. 27. How, at that time?

A. By hydraulic pressure, single sheet between two boards, and is done in the same manner now up here at 10th and Cherry streets, at Sherman's printing-house.

Q. 28. The two boards referred to in your last answer were fuller-boards, were they?

A. They were.

Q. 29. And the sheet was placed unfolded between them, was it?

A. Flat as it came off the printing press.

Q. 30. The press in the Palmer bindery was used merely for bundling gathered books for the purpose of storage, was it not?

226 A. I could not say they could bundle gathered sheets as well as books, whether they were all one signature or gathered books it is all the one thing; I never examined the work that was

doing in the press, whether they were bundles of signatures only, or whether they were gathered books.

Q. 31. In your answer to the fourth question on your direct examination, you speak of a board on top and bottom. What kind of a board was it that was used?

A. A binder's board to protect the sheets from being soiled. Paper would answer just as well.

Q. 32. Pasteboard, was it?

A. Yes, pasteboard or binder's board, the same thing as is put on books.

Redirect by Mr. MURRAY:

Q. 33. Can you give a brief description of the manner employed by the workmen who worked on this press in Mr. Palmer's place, to place the sheets in position in the press, tie the bundles, and remove the tied bundles from the press?

A. Well, I can give you a description of the way in which we do it. We take the sheets from the folding machine, count them off in twenty-five, and put six twenty-fives in the press, and then put the pressure on, tie the rope, take the pressure off, and take the bundle out. It is the same way he did them at that time, only they had hand folding, but that was the same principle exactly.

Q. 34. Were the strings that tied the bundles placed in position for tying before the pressure was put on in both cases?

A. They are in our case.

Q. 35. How was it in the Palmer case?

A. I could not say; I never noticed; I could guess at it; there is one thing certain, they could not put the string on after the pressure is on.

Q. 36. But you know the bundles were tied in the Palmer press before the pressure was taken off, do you not?

(Objected to as leading.)

A. They certainly were, as that is the object of the press to make a bundle as compact as possible.

Q. 37. Then, as I understand you it would be impossible to place the string and tie the bundles, unless the top and bottom blocks were grooved as shown in this sketch?

Sketch of Palmer press.

(Objected to as leading and assuming.)

A. I think it would be.

FRANCIS E. DAVIS.

Sworn and subscribed to before me this 27th day of April, 1895.

[SEAL.] WILLIAM M. STEWART, JR.,
Notary Public.

(Recess was taken from 12 m. to 1 p. m.)

227 ALEXANDER STEWART, a witness produced on behalf of the respondent, being duly sworn, testifies in answer to interrogatories put to him by Mr. Murray as follows:

Q. 1. State your name, age, residence, and occupation.
A. Alexander Stewart; 226 South Fifth street; book-keeper for Tatham & Bros.
Q. 2. How long have you been book-keeper for Tatham & Bros.?
A. About 40 years, I guess.
Q. 3. Do you remember that John Palmer had a bindery in the Tatham building, 224 South Fifth?
A. Yes.
Q. 4. Can you state when he moved into that building?
A. Yes, on or about the 15th day of May, 1874.

ALEX. STEWART.

Sworn and subscribed to before me this 27th day of April, 1895.
[SEAL.] WILLIAM M. STEWART, JR.,
Notary Public.

Adjournment until further notice.

STATE OF PENNSYLVANIA, } ss:
City and County of Philadelphia, }

I, William M. Stewart, Jr., notary public in and for the said city and county, do hereby certify that in pursuance of agreement by counsel, the depositions hereto attached were taken down upon the typewriter in my presence, and from the oral statements of the witnesses in answer to the interrogations and cross-interrogations hereto attached, propounded to them by counsel at the time and place designated in the caption above, and after being so reduced to writing, were subscribed by the witnesses in my presence; the witnesses having been by me first sworn to testify the truth, the whole truth and nothing but the truth, touching the matters at issue in said cause.

I further certify that I am not of counsel for any of the parties to said cause, or in any way interested therein; that the fee $13.00 for taking said depositions has been charged to the defendant, and the same is just and reasonable.

WILLIAM M. STEWART, JR.,
Notary Public.

Endorsed on cover: No. 903. Clarence M. Busch, appellant, *vs.* Joshua W. Jones *et al.* Addition to record per stipulation of counsel. Court of Appeals, District of Columbia. Filed Sep. 21, 1899. Robert Willett, clerk.

228 *Second Addition to Record per Stipulation of Counsel.*

Court of Appeals, District of Columbia, October Term, 1899.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK MANUFACTURING Company. } No. 903.

Filed October 2, 1899.

229 In the Court of Appeals of the District of Columbia.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES ET AL. } No. 903.

Court of Appeals, District of Columbia, April Term, 1899.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK MANUFACTURING Company, Appellees. } No. 903.

It is hereby stipulated and agreed by and between counsel for the parties hereto that the accompanying depositions, taken in the accounting under the interlocutory decree of the supreme court of the District of Columbia in the above-entitled cause, may be printed and taken as part of the transcript of record for use in this court.

CHAS. E. RIORDON,
Of Counsel for Appellant.
M. W. JACOBS,
Counsel for Appellees.

Sept. 27, 1899.

Endorsed: Court of Appeals, D. C., April term, 1899. No. 903. Clarence M. Busch, appellant, *vs.* Joshua W. Jones *et al.* Stipulation of counsel as to second addition to record. Court of Appeals, District of Columbia. Filed Oct. 2, 1899. Robert Willett, clerk.

In the Supreme Court of the District of Columbia. In Equity.

J. W. JONES and THE W. O. HICKOK MANUFACTURING COMPANY
vs.
CLARENCE M. BUSCH.
No. 15391, Docket No. 36.

Testimony for Plaintiff before Frederick M. Ott, Notary Public, Harrisburg, Penn.

In the Supreme Court of the District of Columbia. In Equity.

No. 15391, Docket No. 36.

Accounting before the Auditor under Interlocutory Decree of the Court.

It is hereby stipulated and agreed by counsel for the plaintiffs and counsel for the defendant that the testimony of witnesses
230 in the above accounting may be taken by either party before any officer competent to administer oaths (subject to objections made to the relevancy and competency thereof) with the same effect as if the same were regularly taken before the auditor.

Dated the 29th day of September, 1898.

M. W. JACOBS,
Of Counsel for Plaintiffs.
GEO. J. MURRAY,
Counsel for Defendant.

No. 222 MARKET STREET,
HARRISBURG, *September* 29, 1896.

Testimony taken in the accounting under the interlocutory decree of the court in the above-stated case by agreement of counsel before Frederick M. Ott, Esq., notary public.

Present: M. W. Jacobs for plaintiffs and George J. Murray for defendant.

CLARENCE M. BUSCH, being called by plaintiffs for examination *ore tenus* in accordance with the foregoing decree, being duly sworn, deposes and says as follows:

Q. 1. You are the defendant in this case?

A. Yes.

Q. 2. It has been testified that you have had in use at your printing establishment, in Harrisburg, a signature press, manufactured by the Seibold Machine Company of Dayton, Ohio. Please state when you purchased that press, when you began to use it, and how long you used it.

A. I ordered it in the spring of 1893, received it in July, 1893, began to use it about September, 1893, and it was burned up February 10, 1895.

Q. 3. You are now and were during that time, I believe, the contractor for the State printing of the State of Pennsylvania? Is that correct?

A. Yes.

Q. 4. When did your contract begin?

A. July 1, 1893.

Q. 5. Can you state approximately the number of sheets pressed upon the Seibold press, above referred to, while you had it?

A. About ten and a half million.

Q. 6. What kind of sheets?

A. Sixteen-page sheets.

Q. 7. Printed sheets, were they?

A. Yes; printed sheets exclusively.

Q. 8. Will you look at the deposition of William Hayes Grier, taken in this case, and which I now hand you, and state whether his answers to questions 11 to 17, inclusive, substantially state
231 the manner in which you used the Seibold press in pressing the ten and a half million sheets of which you have spoken?

A. Yes; it does.

Q. 9. By whom was the press operated and at what cost?

A. By a boy; average wages, three dollars and a half a week; spending about one-fifth of his time.

Q. 10. The remainder of his time was spent on other work, was it?

A. Yes.

Q. 11. What was the size of the bundles pressed in the Seibold press and how many signatures did they contain?

A. About twenty-four inches and about nine hundred.

Q. 12. Please state by whom the paper used in your printing for the State is furnished to you.

A. By the State.

Q. 13. How much paper is furnished to you by the State for one thousand copies of any printed signature?

A. Five hundred and twenty-eight.

Q. 14. There being two copies to the sheet?

A. Yes.

Q. 15. What is the size and the weight of the paper used in the State printing?

A. Twenty-six by forty inches, sixty pounds to the ream.

Q. 16. Please state also the quality of the paper so used.

A. Supercalendered book.

Q. 17. Through what operations, if any, were the printed sheets put after leaving the printing press and before they were pressed into bundles, as described by Mr. Grier?

A. Folded only.

Q. 18. What average wages were paid in your establishment between September, 1893, and February, 1895, to girls who worked by the day or week?

A. Four dollars a week.

Q. 19. For what were the extra twenty-eight sheets allowed by the State in printing a thousand copies of any signature?

A. Allowed for waste.

Q. 20. And any saving out of the twenty-eight sheets, which you made, went to you under your contract, did it?

A. Yes.

(Defendant's counsel objects to the whole of the foregoing testimony as incompetent, irrelevant, and immaterial, and, without waiving this objection, but relying upon it, proceeds to cross-examine.)

X Q. 22. How long were you engaged in printing and bookbinding before you took the contract for printing for the State of Pennsylvania in July, 1893?

(Objected to by counsel for the plaintiffs as irrelevant and immaterial.)

A. I learned the bookbinding trade in my father's estab-
232 lishment from 1877 to 1880; succeeded him in business from 1880 to 1892; was put of business in 1893—from July, 1892, to July, 1893.

X Q. 23. In your business from 1883 to 1893, what kind of machines did you employ to do the work which you did after September, 1893, on the Seibold machine?

(Same objection.)

A. A smashing machine.

X Q. 24. What, if any, saving was effected on the Seibold machine over the smashing machine which you had theretofore used?

(Same objection.)

A. Little, if any, in money, but considerably greater in convenience.

X Q. 25. In what did the convenience consist?

(Same objection.)

A. The greater ease of handling machine-compressed bundles over those tied up by hand.

X Q. 26. What did you pay for the Seibold machine? What was the price of it?

(Same objection.)

A. The price was four hundred dollars.

X Q. 27. At what price could you have bought one of the Jones machines for from the Hickok Manufacturing Company of the same size and to do the same work?

A. Mr. Bigelow said he would have sold me one to do the work for five hundred dollars and saved me all this trouble.

X Q. 28. Was there any more waste in using the smashing machine you have spoken about than there is in using the Jones press or the Seibold press?

(Objected to for the reason that the use of the smashing machine has already been set up in this case as an anticipation of the

process of dry-pressing covered by the patent in suit and has been substantially adjudicated by the court, and the defendant is therefore not entitled to reopen that question in this proceeding, which is merely one of accounting under the interlocutory decree of the court.

Defendant's counsel states that this being an accounting, the only question before the master is the amount of saving made under the decree over above what might have been made by the use of machines, whether they did or did not anticipate this patent.)

A. No waste at all in either.

X Q. 29. How extensively was the Jones press used, so far as you know, as compared with the smashing machines which were used for the same purpose?

(Same objection.)

A. About one to thirty, I should think; one Jones machine to thirty of the smashing machines.

233 X Q. 30. Then why did you purchase a Seybold machine instead of using the smashing machines, which you had theretofore used?

(Same objection.)

A. Because the printing law of 1876 provides for "dry-pressing," and to prevent my predecessor filing a possible objection to the use of any other process than what was known here as dry-pressing.

X Q. 31. Mr. Jones, one of the complainants herein, has testified in his answer to cross-question 41, on page 7 of complainants' record, that there was no such thing known in the bookbinder's art as wet-pressing. Was he correct; and if he was, why is the bundling process used on the Jones machine denominated "dry-pressing"?

(Objected to for the foregoing reasons; also as irrelevant, immaterial, and incompetent at this stage of the case.)

A. In hydraulic fuller-board pressing of the flat sheets they were sometimes sprinkled with water before being pressed. This is wet-pressing, I suppose, although I never heard it called that. Why Mr. Jones called his dry-pressing I do not know, unless because no water is used with it.

X Q. 32. Is any water used in the process of pressing in a smashing machine?

(Same objection.)

A. No.

X Q. 33. Is any water used for pressing folded signatures with any machine that you know of?

(Same objection.)

A. No.

—. 34. Have the only machines that you have seen, manufactured by the Hickok Manufacturing Company, such as the one you used

after the Seybold machine was destroyed by fire, been hydraulic machines or screw-press machines?

(Objected to as immaterial and irrelevant.)

A. I have never seen anything but a cut of their screw-press machines. All the machines I have seen were hydraulic.

(Counsel for plaintiffs, without waiving objections, but relying upon the same, proceeds to cross-examine.)

Q. 35. As I understand your testimony, you were not engaged in the printing business prior to entering upon your contract with the State of Pennsylvania on July 1, 1893. Is that correct?

A. I never operated a printing establishment before that.

Q. 36. Did you learn the printer's trade?

A. No.

Q. 37. As I understand it, a smasher is used in the bookbinder's trade in one of the operations of binding after the sheets have been gathered and collated into books. Is that correct?

234 A. Generally, but not necessarily.

Q. 38. Please describe the manner in which a smasher is operated and used.

A. The bunch of sheets are placed on a large board of pasteboard and another pasteboard placed on top of the bunch, and the combination is slid in between the rising bed and stationary head of the machine, and receives a pressure at each revolution of from thirty to one hundred tons. It is allowed to receive two or three of these pressures generally, and then removed. The length of each pressure is about three or four seconds.

Q. 39. What number of sheets are put into a smasher at a time, and what is the total length of time they are allowed to remain there?

A. A bunch from four to six inches thick, and not over a quarter of a minute.

Q. 40. By the use of the Jones or Seybold press the use of a smasher upon the sheets which have been put through either of those presses is dispensed with, is it not?

A. It is unnecessary.

Q. 41. What would be the cost of a smasher, such as would be required for the work of your establishment, if you did not use a signature press?

A. I sold one last May for a hundred and seventy-five dollars.

(Answer objected to as irresponsive.)

Q. 42. What I want to know is the cost of a new one.

A. About six hundred and fifty dollars.

Q. 43. The machine you sold for a hundr-d and seventy-five dollars was one which came into your possession in the purchase of Mr. Meyers' establishment after your fire, was it not?

A. I bought it in June, 1893, for two hundred and fifty dollars for use in another purpose. It was second hand then. It went through the fire. I rebuilt it and sold it, as stated.

Q. 44. When and where did you have the conversation with Mr. Bigelow in which you say he told you he would have sold you a Jones machine for five hundred dollars and saved you all this trouble?

A. He called at my office within a few days of the first notice of the suit, which was served on me, apologized for the matter, stating that the company were drawn into it because of their business relations with Mr. Jones; hoped it would not affect our very pleasant business relations prior to that, and said if he had only known of it in time or seen me before I bought the Seybold machine he could have sold me one of the new-style Jones presses almost as cheap as the Seybold. I told him what the Seybold had cost, and he said he could have sold me his for five hundred dollars and saved me all this trouble.

Q. 45. Didn't Mr. Bigelow tell you substantially that he was sorry you had to be sued, but that it was necessary to bring suit against some one to stop the infringement of the Jones patent by the
235 Seybold Company, and that as you were the most convenient the suit was brought against you?

(Objected to by counsel for defendant as leading.)

A. I remember very distinctly his stating that Mr. Jones had no feeling against me personally and about what you indicate, but that was from Mr. Jones' standpoint entirely. He said the Hickok Company really had no interest in the matter, except through their relations with Mr. Jones, which necessitated their being parties to the suit.

Q. 46. What kind of labor is employed to operate a smasher?

A. A boy; about the same wages as the Jones or Seybold machine.

Q. 47. Is it not a very dangerous machine for a boy to operate?

A. Yes; but they are nearly all operated by boys.

Q. 48. In what does the danger consist?

A. Catching the fingers or hand between the rising bed and the bunch of books.

Recross-examination by Mr. MURRAY:

X Q. 49. Are any fuller-boards used between the sheets for the purpose of removing the type indentations on a smashing machine?

(Objected to as assuming and for the reasons stated in objection to cross-question No. 28.)

A. No fuller-boards are used in connection with a smashing machine.

C. M. BUSCH.

Sworn to and subscribed to before me this twenty-ninth day of September, A. D. 1896.

[Seal of Frederick M. Ott, Notary Public, Harrisburg, Pa.]

FREDERICK M. OTT,
Notary Public.

Adjourned to September 30, 1896, at ten o'clock a. m.

SEPTEMBER 30, 1896—10 a. m.

Examination resumed pursuant to adjournment.
Present: Mr. Jacobs, for plaintiffs, and Mr. Murray, for defendant.

CHARLES A. SUYDAM, being produced, sworn, and examined, saith:

Examined by Mr. JACOBS:

Q. 1. State your age, occupation, and place of residence.
A. Fifty-three years of age; bookbinder by trade, and present place of residence, Philadelphia.
Q. 2. How long have you been engaged in the trade of bookbinding?
236 A. Thirty-nine years.
Q. 3. In what capacities?
A. Four years as an apprentice; then as a journeyman bookbinder with A. Boyd Hamilton, Singerly & Meyers, Benjamin Singerly, and Lane S. Hart, State printers, at Harrisburg, as a journeyman, from 1860 to 1868 or 1869, I think it was, and from that until 1880 as foreman of the State bindery.
Q. 4. Since 1880 what have you been engaged in?
A. As book-edge marbler for the J. B. Lippincot Company, Philadelphia.
Q. 5. While you were foreman of the State bindery at Harrisburg, under the various State printers, what methods of dry-pressing were used in their establishments?
A. There were two methods. The one method was the old method known as dry-pressing with fuller-boards, and what was known as a standing hydraulic press, and the other was known as the Jones dry-pressing system.
Q. 6. When was the Jones dry-pressing system introduced there?
A. It was early in the seventies. I can't say the exact year, but the first machine made and used was at the State bindery, of which I then was the foreman.
Q. 7. While you were foreman, under whose supervision was the dry-pressing of the establishment done?
A. Under my supervision.
A. 8. Was the printing of the sheets done in the same establishment or not?
A. Yes, sir.
Q. 9. Into whose hands did the sheets pass immediately upon leaving the press?
A. They passed through my hands to the drying-room. I allude to the first process named, which was the fuller-board standing-press process.
Q. 10. Please describe, now, the steps of that process until the sheets were ready for sewing, stating also the number of hands and kind of labor required.
A. When the sheets reached the drying-room they were hung upon rods for drying. After they were dry they were taken down and brought into the folding-room; then placed between fuller's

boards, three or four sheets at a time, and then placed under the hydraulic standing press, and the press run up to its full capacity; I couldn't state the number of tons; remaining in that pressure, as a rule, over night; after which the press was emptied, the sheets taken to the folding machine, then, after being folded, tied up into bundles. Each signature was handled in this manner until the entire book was completed. The sheets were then placed on the gathering table; gathered into book form; from there to the smashing machine, and after being smashed the books were ready for being set up for sewing. This required the labor of five different persons, one person hanging up the sheets and taking the same down; two persons for placing the sheets on the fuller's boards; one person tying them in bundles of five hundred each, and one
237 person for -mashing and running up the hydraulic press. With the exception of the person who run- the -mashing machine and the pressure on the hydraulic press, the other labor was performed by girls.

Q. 11. You speak of gathering and folding as two of the steps, but do not mention them in the latter part of your answer, when referring to the persons who performed the labor. Are we to understand that the persons who did the folding and gathering are included in the "five different persons" mentioned in your answer or not?

A. No, sir.

Q. 12. Please state now what steps mentioned in your answer to question 10, as required by the old process of fuller-board dry-pressing, are omitted under the Jones system of which you have spoken.

A. The hanging up and taking down of the sheets, of the two girls who place the sheets between the fuller's boards and take them out; that is about all.

Q. 13. Is the smashing required in connection with the Jones system?

A. Not necessarily so.

Q. 14. For what purpose is a smasher or smashing machine used in a bookbindery, and at what stage of the progress of the work?

A. For the purpose of forcing the air from between the folds and creasing the sheets solidly at the head and back. This is done after the sheets have been gathered into book form.

Q. 15. Will you state now the cost of the operation of dry-pressing printed sheets by the fuller-board process, stating also the wages per week upon which you base your calculation and the kind of labor?

A. Twenty-nine cents per thousand signatures. At three dollars per week. I have already mentioned the labor employed in the process. What I mean by three dollars per week is three dollars per week for each person employed.

Q. 16. Will you state, in a general way, how you have reached this conclusion?

A. By a practical knowledge acquired in the handling of the work by this method and the wages commonly paid in the city of Harrisburg for that kind of service.

Q. 17. The wages of which you speak, I presume, were those paid at the time you had charge of such work here and has no reference to the wages now paid; is that correct?

A. It is.

Q. 18. Are you familiar with the fuller-board hydraulic press process as it is still practiced in large establishments?

A. Yes, sir.

Q. 19. State whether or not there is any difference in the amount of labor required or other items of cost in carrying it out between the process as it is now practiced and as it was practiced under your supervision in the State bindery.

A. The process is practically the same, but the cost very
238 much greater over that, being the difference in the amount of wages paid.

Q. 20. Then, as I understand you, the cost then and now differs only in the amount of wages; is that correct?

A. That is correct.

Q. 21. In your answer to question 10, referring to the old fuller-board process, you spoke of the sheets being tied up into bundles. Please state how they were tied.

A. Five hundred sheets were put into a pile, a couple of sheets of the same signature were placed at either end, the same being tied with a heavy cord, such as came around bundles of printing paper, wrapped around both ways, and the number of the signature marked on the outside of one of those sheets.

Q. 22. Was the tying done by machinery or by hand?

A. By hand.

Q. 23. How were the bundles tied with respect to looseness or solidity?

A. That depended entirely upon the amount of strength used by the girl who tied them up. They were simply tied in that manner to keep them in some kind of shape until ready for gathering.

Q. 24. In your answer to question 15 you state the cost of the operation of dry-pressing printed sheets by the fuller-board process to be "twenty-nine cents per thousand signatures." Will you please explain what you mean by thousand signatures, as you use the phrase in this connection?

A. A signature for an octavo is a sheet of sixteen pages, used in this connection.

Q. 25. Was there any waste of paper in connection with the fuller-board or the Jones process of dry-pressing? And, if there was, please state the comparative waste under the two systems.

A. By the fuller-board process there was considerable waste, probably ten signatures in a thousand, caused by the insecure manner in which they were tied up and handled, while by the Jones process there was comparatively none, as handled in the bindery.

(Recess from 1 to 2 p. m.)

Q. 26. Just as we were about taking the recess for dinner you

stated that you desired to make a correction of your testimony in some respect. You may now do so.

A. I desire to add to the word- "State bindery," in answer to question 3, "excepting a period of two years while in the service of the United States as a volunteer soldier during the late rebellion."

I also desire to make a correction so as to have the answer to question 6 read: "It was in the fall of 1877;" and strike out "I can't say the exact year;" and the balance of the answer to read: "The first machine made and used was at the State bindery, of which I then was foreman."

I also desire to correct the answer to question 12—that is, that "all the steps mentioned in the answer to question 10 as required by the old process of fuller-board dry-pressing are omitted,"
239 inasmuch as the process under the Jones system requires a different manner of handling the sheets.

Q. 27. In view of the correction which you have just made to your answer to question 12, in order that the matter may clearly appear upon the record, I ask you to state the steps taken from the time the sheets leave the printing press until they are ready for sewing, first, under the old fuller-board process, and secondly, under the Jones process, and to indicate what operations, if any, under the Jones process are substituted for any operations under the fuller-board process which are omitted in that of Mr. Jones.

A. The first question I have already answered, from the sheets leaving the printing press until they are ready for the sewer. Do you want that repeated?

Q. 28. Yes.

A The sheets were taken from the press-room direct to the sheet-room. They were there hung upon rods to dry. After they were dried they were taken off the rods, brought down into the folding-room. They were then placed between fuller's boards three or four sheets at a time. From there they were placed in the hydraulic standing press. The press was then run up tight by hydraulic pressure. After being pressed, as a rule, over night the pressure was taken off the sheets, the press emptied of fuller's boards and sheets, and the sheets taken out from between the boards. The sheets were then folded and tied up in bundles of five hundred. The same process gone through with each signature until the book was completed. The sheets were then gathered into book form, taken to the smashing machine and smashed, and the book was then ready for sewing.

In the Jones process, the sheets came from the sheet-room direct to the folding machine. When they were folded they were placed in the Jones machine, five hundred signatures at a time, with smooth-finished oak boards of an inch thickness placed at each end, the outside edges of the boards being rounded off. The pressure was then applied. The required amount being obtained, a heavy cord was placed both ways around the five hundred signatures, the pressure relieved, and the signatures stired away until the completion of the book, thus doing away with the hanging of the sheets

and all of the handling as described in the process with fuller's boards and standing press.

When the last sheet has been printed and pressed as just described the sheets are then gathered into book form and are ready for the sewer.

Q. 29. For the five different persons required for the various steps, exclusive of folding and gathering, under the fuller-board process, how many operatives are substituted under the Jones process?

A. One.

(The same objection interposed by counsel for defendant to the testimony of the preceding witness is repeated here, and the
240 further objection that the comparison is between the old, antiquated process, which was out of use long prior to the date of the alleged infringement by defendant, instead of between the modern processes used for the last ten or fifteen years, and the Jones process, so called; but defendant's counsel, without waiving the objection, proceeds to cross-examine:)

X Q. 30. Do you mean by your answer describing Jones' process that the sheets were brought directly from the press, without being first dried, to the folder?

A. Yes, sir.

X Q. 31. And then pressed, under the Jones process, while wet?

A. I didn't say so.

X Q. 32. What did you mean by saying "thus doing away with the hanging of the sheets," which you deemed necessary in the old fuller-board process?

A. Experience had shown us that the sheets could be taken direct from the press-room, folded, placed in the Jones machine, tied up under hydraulic pressure, without danger of any set-off.

X Q. 33. Then they were not dry-pressed, were they—that is, they were not dried in the old manner before they went to the press?

A. Not by hanging on rods, as described in the fuller-board process.

X Q. 34. Describe how they were dried before going to the press.

A. The sheets were not dried, in the term that the word is generally used, the Jones process not requiring that the sheets should be hung up in order that the ink should be set.

X Q. 35. Well, how were they dried, was the question you were asked, if dried at all?

A. They were not dried, only so far as the action of the air might affect the ink in passing through the folding machine.

X Q. 36. Well, after they passed through the folding machine were they wet or dry?

A. They were in a condition to produce satisfactory results, as claimed, in dry-pressing. I wish to add that the paper was not wet down, as had been customary at one time, and that the paper was run through the printing press as dry, and the only dampness was from the fresh ink.

X Q. 37. Then under the new process of printing it would not be

necessary to hang the sheets if they were pressed on the old hydraulic press, would it?

A. Yes, sir; that is my impression.

X Q. 38. Give us the reason for your impression.

A. For the reason that under the old system of pressing with fuller-boards, by placing the board known as the fuller's board between the sheets, a very compact mass of paper and board, not yielding any except so far as removing the impression was concerned, would cause the fresh ink to what I would call "break" and set off, while on the Jones machine, the papers having no hard fuller's board between them, the impression would yield gradually and there would be no set-off.

241 X Q. 39. Whether it yielded gradually or not would depend on the speed of the movable platen in either case or the amount of the pressure applied, would it not?

A. I think not.

X Q. 40. Why?

A. For the reason that I have saw sheets brought to the State bindery, where I was then in charge, given into my care, which were doubly charged with ink and prepared expressly to show that the Jones machine could not do the work claimed for it. I run the pressure on the machine and tied up those sheets and left the pressure on over night, and when opened in the morning the indentations of the type were entirely removed and no indications of a set-off, while some of the same class of sheets were placed in a standing press in a small quantity, the pressure applied, and when taken out next morning the reading was scarcely legible by reason of the set-off.

X Q. 41. Do you know how much pressure was applied in each case?

A. I do not; for the reason that I have forgotten the number of tons pressure ordinarily used for the Jones machine, but it was very much in excess of that applied in the standing press. I would also say that after eighteen years my memory is not as vivid in regard to the number of tons pressure as it was when I had it in daily use.

X Q. 42. Mr. Thomas B. Penicks, a witness called in this case, has testified that it was well known that the intermediate sheets between the fuller-boards in the old process were smoother and better and had the type indentations more perfectly removed from them than from the sheets that came in contact with the fuller-boards. Was that also your experience with the old process?

A. No, sir.

X Q. 43. The reverse of that was true, then, in your experience?

(Objected to by counsel for plaintiffs as irrelevant and immaterial.)

A. I never saw any difference. If anything, it was in favor of the sheets that were next to the fuller-boards.

X Q. 44. What is the distance between the platens in the old pon-

derous process you have spoken of as being in existence before the Jones machine was used?

A. That varies. In some establishments I have seen them, I should judge, possibly six feet between the platens and the top of the press. The average of those that I have seen were possibly four and a half to five feet.

X Q. 45. How many sheets would be put in the press at a time?

A. I think about five thousand.

X Q. 46. How long would it take to fill the press, employing the two girls who you say did that work?

A. It would take two girls to fill and empty the press, including the putting on and taking off of the pressure, ten hours.

242 X Q. 47. What is the comparative pressure used in the Jones press and the machine you denominate a "smasher"?

A. I can't answer that question. The smasher should not be compared with the Jones machine, as the relative pressure of the smasher is very small.

X Q. 48. The Jones machine you speak about, I suppose, is the one that was used in the State printing office here while you were there employed?

A. The machine I allude to was the one patented by Mr. Joshua W. Jones, of Harrisburg, Pa., in, I think, the year 1877.

X Q. 49. Please describe that machine.

A. I certainly can't use the technical terms in describing this machine. It was built of iron, with a trough sloping from the head to the foot, in which the sheets were placed with a stationary head and a movable platen moving on an incline. The pressure was applied by forcing water into a chamber, which forced what I call the plunger to move out of this chamber, pressing the sheets up against the head of this machine. There are openings in the side and bottom of the trough to admit of the free use of the hands of the operator in placing the cords around the bundle of signatures. It also had screw-holes in the top head and smooth holes in the platen, by which rods could be centered for the different sized sheets. There were two pumps, one large and one small one. The large one moved the platen up rapidly and the small pump for the additional pressure.

X Q. 50. That fairly describes the machine you worked on at the State bindery here at Harrisburg, does it?

A. I think it does.

X Q. 51. Did you ever see any other kind of a machine than the one described in the preceding answer that was said to be made under the Jones patent?

A. I saw several that were made under the Joshua W. Jones patent.

X Q. 52. Were they the same or different from the one you have just described?

A. Practically the same, except an experimental machine made of wood, which, I believe, led to the invention of the present hydraulic machine.

X Q. 53. Are they using the Jones machine in the establishment you are engaged in now?

(Objected to as irrelevant and immaterial.)

A. No, sir.

X Q. 54. Do they still use the old, ponderous fuller-board process you have described above?

(Same objection.)

A. They do.

X Q. 55. Mr. Grier was superintendent of the State printing when you were employed in the State printing office, was he not?

243 A. No, sir; I think not; I am not so positive about that; I think that he was appointed after I left there.

X Q. 56. Mr. Grier states in his answer to cross-question 49, on page 7 of his deposition taken in this case, that after he purchased a Gordon press it did the work without any necessity of removing impressions, and that he only used the fuller-board process for about three months and then abandoned it. You say that in your establishment you still use it. Do you in your establishment use the old-style printing presses?

(Objected to as irrelevant and immaterial and not proper cross-examination.)

A. I wish to say in regard to the first part of the interrogation that Mr. Hayes Grier was a newspaper and job printer, and it was very evident that he used one of the old style of presses that was worked by hand, as it was called, pulled by a bar, by which the indentations of the type on letter-heads and bill-heads, such as he mentions, were almost driven through the paper, and in order to turn out a job any way creditable he was compelled to use the fuller's-boards, placing them in singly, in order to turn out a creditable job. The use of the Gordon press renders it entirely unnecessary to go through that process after printing. In regard to the second interrogation, I wish to say that the same kind and style of presses are used in the establishment where I am now employed as were used by Mr. Benjamin Singerly and Mr. Lane S. Hart, State printers, while I was in their employ.

Redirect by Mr. JACOBS (without waiving objections):

Q. 57. What is a Gordon press, and for what kind of work is it used?

A. It is what is known as a job press. They are used for such things as bill-heads, circulars and letter-heads, and work of that description, and cards. It makes a very light impression.

Q. 58. Is it capable of use in printing signatures of books of any such size as the work of the State of Pennsylvania?

A. Not as I understand signatures to be of the size of eight or sixteen pages, of the size used by the State of Pennsylvania.

Q. 59. Referring to your answer to cross-question 36, please state

whether or not the process of printing sheets dry and "without wetting down" had been introduced into the State printing office while you were still using the fuller-board process of dry-pressing.

A. Yes, sir.

Q. 60. Was it or not found necessary to put sheets thus printed dry and without wetting down through the operation of drying before subjecting them to the operation of dry-pressing between fuller-boards?

A. Yes, sir.

Q. 61. Are sheets thus printed still subjected to the preliminary operation of drying, where the fuller-board process of dry-pressing is used?

244 A. I couldn't answer that positively; not as to all the sheets being treated in that way in dry-pressing.

Q. 62. Please explain a little more fully what you mean by your last answer.

A. I have had but a limited opportunity to ascertain that fact, but believe that all cut-work is so treated.

Q. 63. In your judgment, based upon your experience in the art, would or would it not be practicable to subject sheets thus printed to the operation of dry-pressing between fuller-boards without such preliminary drying?

A. My experience has been of such a character that I would not like to risk it.

Recross-examination by Mr. MURRAY:

X Q. 64. If the sheets were printed dry and placed in an old hydraulic press without fuller-boards would the type indentations be removed without offsetting the ink?

A. In answering that question I would like to ask, were the sheets hung up before being put in the press or not?

X Q. 65. No; they were to be put in the press in the same manner as in the old process, with fuller-boards, but without any preliminary drying when the sheets were printed dry.

A. In answer to that question, then, I would say that it is absurd to suppose a case of that kind, of filling up a press composed entirely of printed sheets such as we have been talking about here. It occurs to me that, so far as the pressing is concerned, it would be something like placing a huge sponge into a press of that kind and expecting to press it flat. So far as the question of offsetting is concerned, that could only be answered by an experiment of that kind.

X Q. 66. Are flat printed sheets, piled one on top of the other any more spongey than the same sheets are when folded and piled one on top of the other?

A. They are, inasmuch as the flat sheets have the indentations of the type all one way, while in the folded sheets the type become opposite, as it were, and more readily yield to pressure.

X Q. 67. They have the indentations all one way when placed between fuller-boards, have they not?

A. Yes, sir; but the fuller's boards are interspersed to give solidity in the pressing that could not otherwise be obtained in the flat sheets.

X Q. 68. But you say it is this solidity that would cause offsetting in the sheets which are printed dry and placed between fuller-boards without first being hung up, while if the same sheets were folded and subjected to pressure without fuller-boards, in Jones' process, the yielding of the sheets would prevent the offsetting. Will you please explain this apparent discrepancy?

A. I did not say that it was the solidity of the sheets that would cause the offsetting if placed between fuller-boards. Any one knows who has ever seen a printing press work that when the sheets
245 come from the press and are deposited by the fly one on top of the other there is no possible chance of the air getting at the ink, and if taken direct from the press and put into fuller's boards is what would cause the set-off in the damp state of the ink, while in the Jones process, in passing through the folding machine, there is a current of air strikes both sides of the sheet, and in folding it retains considerable air, which prevents the sheet from lying closely together in its folded state, thereby causing a thin film to form on the ink, causing it to dry, and that air remains in those sheets until forced out by the pressure of his machine.

X Q. 69. If the sheets were folded, gathered, tied up in bundles in the old way until ready for use and then subjected to the action of the smasher, would the type indentations be removed and the book be in condition for sewing?

(Objected to for the reason that the use of the smashing machine has already been set up in this case as an anticipation of the process of dry-pressing covered by the patent in suit, and has been substantially adjudicated by the court against the defendant; and the defendant is therefore not entitled to reopen that question in this proceeding.)

(Defendant's counsel states that he has no desire to reopen any question as to infringement, but that the first witness called testified that the only process used by him prior to the alleged date of the infringement was the old smashing-machine process, which was free for any one to use, and that therefore the comparison should be made between that process and the process of the Jones patent, instead of the antiquated old fuller-board process.)

(Counsel for plaintiffs calls attention to the fact that the witness referred to was the defendant himself, and that whatever testimony he may have given on this subject was given under this same objection.)

A. No, sir; the type indentations would not be removed, but the book might be in condition for sewing.

X Q. 70. Why would not the type indentations be removed, if the sheets were flattened out smooth and ready for sewing?

A. For the reason that the power of the pressure would not be sufficient and of too short a duration.

X Q. 71. Does it require more pressure to remove type indenta-

tions than it does to flatten down the folded edges of the signatures?

A. Yes, sir.

X Q. 72. Is there any limit to the power that might be applied to a smasher? If so, what limit?

A. There is a limit, but what limit I couldn't answer; but I know that I have seen the front frame of the smasher cracked and forced apart by not properly regulating the pressure in changing from one thickness of book to another.

X Q. 73. How much pressure does it require to remove type indentations in a pile of signatures, say, six inches thick?

246 A. A great deal more than is contained in a -masher—in the most powerful -masher that ever was built.

X Q. 74. Is there more or less power in a -masher than there would be in a Jones machine, if it were operated by hand like the machine illustrated on page 116 of complainants' record?

A. There is less power in a -masher than there is in the machine shown here on page 116 when operated by hand, so far as the removal of indentations of type are concerned, from the fact that the power from this hand machine is retained by the cords placed around the bundle of sheets before the pressure is taken off, while in the smashing machine the power is retained but momentarily, and the smashing machine is only intended to expell the air that may be retained in the folding of the sheets.

X Q. 75. Do you think that you could apply power enough to that machine by hand to break its iron frame, as you say that the smasher was broken?

A. I think not.

X Q. 76. Then why do you say the smasher has less power than this machine?

A. From the fact that the power of the smasher is not retained, while in the other machine the power applied is held by the cords which hold the sheets. It is on the same principle that you fold a sheet of paper and strike it with a hammer to straighten out the fold, and take a similar piece of paper and fold it, open it out, and lay it under a paper-weight, leaving it lie under that weight for some time, and better results will be accomplished by the paper-weight.

X Q. 77. It is your opinion, then, that after the indentations have been flattened out they will return again if not held out. Am I right?

A. No, sir.

X Q. 78. Then why do you say that if they are subjected to a greater pressure in a smasher than in a hand press the ones subjected to the pressure of the smasher would not be removed, while the one subjected to the lighter pressure in the hand press would be if the pressure was partially held by strings?

A. I answered that just a few moments ago, and I repeated that if the power obtained by the smasher could be retained, as in the case of the hand press, by cords, then I believed the result would be equally satisfactory.

X Q. 79. But the strings used for tying the Jones bundles do not retain the whole pressure put upon them while in the press, do they?

A. They retain the pressure sufficient in quantity to accomplish the work that the machine was constructed for.

X Q. 80. Yes; but Mr. Busch says the smasher does the same thing, and that he has done it with a smasher. Now, I don't yet understand why, if it requires a certain pressure to take out the indentations, how that pressure, when relaxed, as it is in the Jones machine, would hold the indentations out, if they require holding out; that is what I would like you to explain.

247 (The introductory part of the question is objected to by counsel for plaintiffs as not correctly stating the substance or effect of Mr. Busch's testimony; and this and all the foregoing and any succeeding questions relating to the use of the smasher are objected to for the reasons stated in the objection to cross-question 69.)

(In reply to the first part of the objection counsel is referred to cross-question 23 and its answer of Mr. Busch's, which is as follows:

"X Q. 23. In your business from 1883 to 1893, what kind of machines did you employ to do the work which you did after September, 1893, on the Seybold machine?

A. A smashing machine.")

A. I want to say that when Mr. Busch makes that assertion, that he produces the effect of dry-pressing by the use of a smashing machine, he makes an assertion that will not bear the criticism of expert printers. Those familiar with the Jones machine know that when the pressure is run out there is an extra amount of pressure put on to allow for the stretching of the ropes or twine.

I ought to explain further that when this machine first came into use we experimented with the pressure power until we had obtained the desired results, allowing for the stretching of the twine.

X Q. 81. If the Jones process, as you term it, is such a valuable improvement over the old cumbrous process, as you claim it to be, can you explain why the house you are with now, which is one of the largest in the United States, has not adopted it?

(Objected to as irrelevant, immaterial, and not proper cross-examination, ans as calling for the mere opinion of the witness with regard to matters which would not naturally be within his knowledge and concerning which he is not shown to have any means of information.)

A. I cannot, for the reason that I have never been asked nor been consulted with in regard to their methods of conducting their work outside of my own line of business.

Re-redirect by Mr. JACOBS (without waiving objections):

Q. 82. In all your experience, covering, as you have said, thirty-nine years, have you ever known or heard of a smasher or smashing

machine being used for the purpose of removing type indentations from printed sheets?

A. I never have.

Q. 83. In your judgment, based upon your experience and your knowledge of the use of such machines and of what is necessary for the removal of type indentations, is a smasher a practically operative machine for such purpose?

A. No, sir; I think not; I am positive about it; I never heard of it being intended for that purpose.

Q. 84. If a charge of printed sheets and fuller-boards were
248 put into a hydraulic standing press of, say, a hundred-tons pressure and the pressure applied and immediately released, would or would not, in your judgment, the type indentations be removed from the sheets?

A. No, sir.

Q. 85. If signatures were placed in the ordinary way in a Jones press and the pressure applied and immediately released without any tying of the bundle, would or would not the type indentations be removed?

A. No, sir; the retention of the pressure is what accomplishes the result.

CHARLES A. SUYDAM.

Sworn to and subscribed before me this 30th day of September, 1896.

FREDERICK M. OTT,
Notary Public.

(Adjourned to October 1, 1896, at half past nine a. m.)

OCTOBER 1, 1896—9.30 a. m.

Examination resumed pursuant to adjournment.

Present: Same counsel.

JOSHUA W. JONES, being produced, sworn, and examined, saith:

Examined by Mr. JACOBS:

Q. 1. You are one of the plaintiffs in this case?

A. I am.

Q. 2. And the same Joshua W. Jones who formerly testified therein?

A. I am.

Q. 3. In your former deposition you stated your means of knowledge of the printing and bookbinding arts from the commencement of your apprenticeship, in 1844, until your resignation of the office of superintendent of public printing of the State of Pennsylvania in August, 1883. Please tell us whether or not you have since 1883 kept up your knowledge of the progress of those arts; and, if so, in what manner.

A. I have kept up since then my knowledge of said arts by having visited some establishments and through the trade publications to

which I am a subscriber, and each one that I received I looked over carefully, — whether there was such a thing as a new process discovered for the operation of removing type indentations, technically known as dry-pressing. It was my interest to watch this feature particularly, and I did so. I found no process mentioned; neither did I see any other process in any establishment which I went through, excepting the process of pressing between fuller-boards or my own.

Q. 4. Have you or not since 1883 down to the present time
249 been taking the principal journals of those trades published in this country?

A. I have, and part of the time those of England.

Q. 5. And have you carefully read them from time to time?

A. I carefully read anything contained in them that was of interest to me.

Q. 6. Has it or not been the custom of those journals to describe or otherwise call attention to any important inventions or discoveries in the various branches of those arts?

A. It was the custom for those journals to speak of all new discoveries and inventions relating to the paper-printing and book-binding arts. To illustrate: At the time of my invention the subject was taken up by the trade journals, both in this country and in Europe, and was discussed. Almost all of them that fell into my hands doubted the process and that sheets could be pressed in that manner without offsetting.

Q. 7. From the facilities which you have had for gaining information during the period named, as well as from your knowledge of the arts prior to your resignation as superintendent of public printing, are you in position to say whether or not you are acquainted with the practical processes of removing type indentations from printed sheets in use or open to the public during the period beginning with September 1, 1893, and ending February 10, 1895?

A. I am. There was but one modern process, and that was the pressing of the sheets between fuller-boards.

Q. 8. Were there any older processes as cheap and practicable as that?

A. No, sir; not to my knowledge.

Q. 9. Had you or not taken occasion, either prior or subsequently to 1883, to study the older processes, and do you believe that you were familiar with them?

A. I can't say that I made a particular study of them, but I have read of them. I never practised the older processes; in that sense I was not familiar with them. I was familiar with the modern process of pressing them between fuller-boards, having practiced the same.

Q. 10. Did you or not know what those old processes were and how they compared with the fuller-board process, with respect to economy and practicability?

A. I only know of one older process, and that was to press the sheets between heated iron plates. This process must have been very expensive, and it is said that it did not produce good work;

that the heat would destroy the ink. I think it is also mentioned that it discolored the ink.

Q. 11. Leaving out of view, now, your own process which was covered by your patent, what process or processes was or were open to the public during the period beginning September 1, 1893, and ending February 10, 1895?

A. The process of placing the sheets between fuller's-boards and pressing them. The old process of pressing them between heated iron plates was an obsolete one.

250 Q. 12. It has been attempted, in this proceeding, to be shown on behalf of the defendant that the use of a smasher was, during the period named, a practicable method of removing type indentations from printed sheets. What do you have to say with regard to this?

A. That is an utter impossibility, to do the work contemplated and known as pressing the sheets smooth, removing the indentations, and said indentations to remain permanently smoothed out, and it might be termed "a lick and a promise."

Q. 13. Are you familiar with the use of a smasher; if so, to what extent?

A. I am familiar with the use and purpose of the smasher, having the same in the establishment which I was manager of; have seen it in almost daily use, and have myself done work on the same. The use it is for and the work it accomplishes is to smash the books when gathered and collated, to remove the air between the sheets, making the head, back, and front folds mashed even and solid with the body of the page, and to produce solidity to the entire book.

Q. 14. Will you state now why, in your judgment, a smasher would not practically perform the work of removing type indentations from printed sheets?

A. First, it would be impracticable to smash freshly printed sheets without first having gone through the process of drying the ink, as a smasher operates very fast, and, as it were, gives a powerful blow. A blow of less power than that produced by the smasher will offset the ink from one page to the other. Second, the smashing machine gives a sudden and quick pressure. The dwell of the pressure is less than a quarter of a second, and it is only the long-continued pressure on the sheet that will restore the disturbed fibres of the paper, produced in the process of printing. The elasticity of the indentations would, again, cause the indentations to reappear. Even if it were practicable it would be an expensive operation, as the capacity of a smasher for one operation is small. I do not believe that a book over three inches in thickness can be smashed at one time. It takes considerable time in the operation. First, the books have to be evened up carefully on the head and back, so that each signature is flush and even with each other. The book then has to be laid on a pasteboard or similar substance, another placed on the top. It is then placed between the bed and head of the smasher and smashed, removed; the boards also removed. These are the operations required in the process of smashing. I would also add that it is a very dangerous operation. In the putting the

books into the smasher by the least inattention the operator is liable to have his fingers or hand smashed. I know of a case where such an accident did occur, and the operator had to have his hand amputated.

Q. 15. Have you ever used or seen used a smasher upon books made up of undry-pressed sheets; and, if so, were the type indentations, as a matter of fact, removed by the operation?

A. No.

Q. 16. Did you ever know of a smasher being used for the purpose of removing type indentations?

A. No.

251 Q. 17. Did you ever, before the taking of defendant's testimony in this case, hear or know that such a thing was considered by any one as possible?

A. No; and it would not comply with the law or the contract of the defendant, which fixes the price for press-work, including dry-pressing; nor with the provision that the work be done in a neat and workmanlike manner, nor with the provision "and the printing and binding and all other work to be first class and kept up to the standard of the times."

Q. 18. Will you state now the cost of dry-pressing printed sheets by the fuller-board process, stating in detail how you arrive at the result, the amount of wages assumed, and so forth?

A. By the extremely low wages paid here and the cheap class of labor used in the process as it might be done here, the dry-pressing by the fuller's boards, including all the processes the sheet passes through, including that of smashing, which smashing is only done for the purpose of displacing the air, leveling the folds, and solidity of the book, taken on the basis of the amount of work done by the State printer from September, 1893, to the time of his fire in February, 1895, it would cost about twenty-seven cents per thousand sheets.

Assuming that the figures I obtained from the auditor general's office, copied from the bills of Mr. Busch, it appears that there were ten millions six hundred and seventy-one thousand five hundred sheets that were printed and dry-pressed from September 1, 1893, to February 10, 1895. There would be about four hundred and forty working days. There would have to be done on an average of twenty-four thousand two hundred and fifty-four sheets daily. The drying of this number of sheets would require the labor of at least two girls at four dollars per week each, or one dollar thirty-four and a third cents per day, equal to five and a half cents per thousand sheets. It would require to press between boards five presses, each charged with about five thousand sheets. The labor to fill and unfill these presses would require at least six girls at four dollars per week, or sixteen and a half cents per thousand. Bundling by hand, twenty-four thousand five hundred and fifty-four sheets will require the labor of one boy at the rate of three dollars per week, about two and a half cents per thousand. Smashing this amount of sheets could not be done in less than one day. A boy at

three dollars and a half per week would make it two and a half cents per thousand sheets; total, twenty-seven cents per thousand. I doubt whether the same could be done elsewhere for double that amount.

Q. 19. How do you arrive at the number of sheets to each charge of the press, to wit, five thousand?

A. Taking as a basis that the open space of a press between platen and head is five feet. This would be a very high press; the top would be very high, and to fill in the sheets and boards in a press of this height would be a very difficult thing and hard work for girls to do, as the labor of filling near the top would be
252 such hard work that girls should not be expected to do it.

Two hundred and fifty sheets of sixty-pound paper, including the swell caused by the impression in printing, and sheets loosely laid one on top of another, measures one and a half inches. Sheets laid between fuller's boards on an average of three each would require eighty-four boards for two hundred and fifty sheets; twenty-four boards to one inch; eighty-four boards, three and a half inches; one wooden board, one inch; total, six inches for two hundred and fifty sheets; twenty-five hundred sheets, sixty inches, or five feet. Now, this is presuming that the sheets and boards would be put in solid at the top. This would be almost an impossibility, as they could not readily fill the entire space of five feet without having a little room of a few inches between the top of the pile and the bottom of the head. Twenty-five hundred sheets—these are double sheets, and make five thousand copies when cut in two. Even by this process I can show that the ink will sometimes, when not thoroughly dried, offset and smear, and therefore the sheets have to be very carefully handled in laying them between the boards and removing them. I have a small sample of board which has been used for this purpose and shows the marks of the smear in drawing the sheets across the board in the act of laying them in or removing them, and also the offset of the ink from the sheets bearing the faint outlines of letters.

Q. 20. Assuming the distance between the platen and the head of the press to be five feet, what would be the height of the top of the pile from the floor?

A. I should say it would be at least seven feet, if not more, from the floor to the under side of the head. First is the base, which is a very heavy casting; the ram, as I have known presses, were about from eighteen to twenty-four inches. The kettle in which this ram works is not less than about three inches of metal on the bottom. The platen, I should say, would not be less than four inches where it lies on the top of the ram.

Q. 21. Is the press which you have supposed about as large as could be practically used with the labor of girls?

A. Yes.

Q. 22. If a smaller press were used, would the cost of the operation be greater or smaller?

A. I don't know as it would; it would require more presses, and

they are an expensive piece of machinery, and it would take up more floor space.

(Recess to 1.30 p. m.)

Q. 23. In the fuller-board process. can the drying of the printed sheets be dispensed with, assuming the paper not to have been "wet down" before printing?

A. No; not directly, or soon after the sheets leave the printing press. They might be if the sheets were allowed to stand for a long time, until the paper had naturally absorbed the wetness of the ink.

253 This, on sized and supercalendered paper, such as the State furnishes, would require a very long time; how long I cannot tell.

Q. 24. Would it be practicable in an office such as that of the State printer of Pennsylvania to allow sheets to remain long enough for such natural drying process before binding them up into books?

A. I can't say as to whether he could leave them in such a stage until the binding of the book, but I will say that it would not be practically economical to allow the work to stop at this stage. The overcrowding of the work to be done between the printing of the sheets and the binding of the book would require, in my opinion, alone, for the dry-pressing and folding and gathering, collating, and sewing, smashing, if they had to be smashed—would require, on a book of five hundred pages and an edition of twenty thousand copies or more, more room than this building of the court-house contains.

Q. 25. You were acquainted with the building in which Mr. Busch carried on the State printing and binding before his fire in February, 1895, were you?

A. I knew the building. I have been in it twice; the first time was on the twenty-eighth of November, 1892; the second time was during the taking of the first testimony here, while Mr. Hill was here, in September, 1894. I am well satisfied that that building would not have been sufficiently large to have dried and dry-pressed, between boards, and stored the sheets, from the commencement of printing to the gathering of the sheets in the book, of the item of twenty-two thousand one hundred and fifty copies Annual Report of the Superintendent of Public Instruction, six hundred and eighty-six thousand six hundred and fifty sheets, and left room sufficient to do the work required on the other stages up to the point I have mentioned without getting additional room outside of said building; whilst the Report of the Superintendent of Public Instruction was but one item out of sixteen, running from fifty copies to thirty-two thousand and fifty copies, the one containing fifty sheets, the other one million three hundred and fourteen thousand and fifty. These items appear on the bill of Mr. Busch, December 31, 1893. This work must have evidently been done between that date and the first of July prior. I will state that the total number of sheets of these items in the bill of December 31, 1893, is two millions six hundred and seventeen thousand seven hundred and forty sheets. I do not say that I believe that all of these sheets were stored at one

and the same time, but it is evident that the sheets for the Report of the Superintendent of Public Instruction were all printed and stored before they were bound into books, and also that the item of thirty-two thousand and fifty copies of Agriculture of Pennsylvania, one million three hundred and thirteen thousand and fifty sheets had to be stored before there were any of them bound into books. There are other large items, such as five hundred and forty-seven thousand three hundred and ninety sheets, and so, also, with the balance of the items, together with the ones I have mentioned, would
254 have had to have been dried and pressed and folded before the operation of gathering was commenced, and this requires a large amount of floor space in the method of dry-pressing between fuller-boards.

Q. 26. Are we to understand from your last answer that the building would not have been large enough to have carried on these operations by the old fuller-board process, assuming the sheets to have been dried by hanging on racks or assuming them to have been dried as suggested in your answer to question 23?

A. Both.

Q. 27. Why would it not have been large enough, assuming the sheets to have been dried on racks?

A. The sheets were dried on poles fixed near the ceiling of the room. The floor space under the poles was substantially occupied by the tables on which the sheets were laid before hanging them up to dry and again putting them on after they were dry and trucking them from one part of the room to another or to the elevator, if there was one, to transport them to another room, and also for the operator to move underneath the poles. This drying them on poles would require a very large room to dry the number of sheets given in my answer to question 25.

Q. 28. Would the dry-pressing itself by the fuller-board process have required more room than by your process?

A. It would. I estimate that the press itself that would take in a sheet twenty-six by forty, together with the pumps, the table to manipulate the sheets and boards, and the room required for the operators, would require about eighty-four square feet of floor space to one press. On this basis, it would require for five presses and the room to operate them about four hundred and twenty square feet.

As near as I remember now, my machine and room to operate the same requires about thirty-two square feet floor space.

Q. 29. The defendant, Mr. Busch, has told us in his answer- to questions 13, 19, and 20 that he was allowed by the State twenty-eight extra sheets for each one thousand copies of any printed signature for waste, the saving out of which went to him under his contract. Is there any difference in waste under the two processes, to wit, the fuller-board process and yours? If there is, state what it is.

A. There is. The allowance of twenty-eight sheets to the thousand is certainly a liberal one. I have never known or heard of such liberality. It was the custom to allow ten sheets to the printer for waste, and this was the amount that was allowed by me when I

was superintendent of public printing. To make one thousand perfect copies it required, under the old process, practically the extra ten sheets, so that there was little, if any, paper saved to the printer. The sheets were wasted by the old process first in making ready a form for first impression and register. On an edition of, say, five thousand copies this waste was practically nominal. The great waste occurred after the sheets were printed in having to pass through so many handlings. They would get soiled, torn, and marred in handling and hanging up to dry, taking them
255 down again, and in handling them through the fuller's board, and using them in tying up to protect the outsides of the bundles. By the Jones process fully nine-tenths of this waste is saved to the printer, as there is but one process between the printing press and the dry-pressing. The only waste would be that of first impression and register on the printing press. On an allowance of ten sheets to the printer for waste, in ten million six hundred and seventy-one thousand five hundred sheets it would be one hundred and six thousand seven hundred and fifteen sheets. Nine per cent. of this amount would be ninety-six thousand and thirty-nine sheets, or four hundred and one quires, equal to two hundred reams, sixty pounds to the ream, or twelve thousand pounds. This would be saved to the printer by the Jones process. I would also add that sheets done by the Jones process can be stored in at least one-half the floor space that they could be if bundled by hand in the old process.

(By consent of counsel, the examination of Joshua W. Jones is suspended at this point to allow the deposition of R. A. Johnston.)

R. A. JOHNSTON, being produced, sworn, and examined, saith:

Examined by Mr. JACOBS:

Q. 1. State your age, occupation, and place of residence.

A. Age, fifty-one; occupation, paper dealer, and place of residence, Harrisburg.

Q. 2. You are a member of the firm of Johnston & Company?

A. Yes, sir.

Q. 3. Have you at present the contract for furnishing the State of Pennsylvania the supercalendered book paper used in its public printing?

A. Yes, sir.

Q. 4. When did your contract begin?

A. In July, 1895, and runs two years.

Q. 5. Were you a bidder on the contract for furnishing the same paper two years before?

A. Yes, sir.

Q. 6. And are acquainted with the characte- of the paper which was required by that contract to be furnished to the State printer for the work of the State?

A. Yes, sir.

Q. 7. What was the market price of that kind of paper during

the period beginning September 1, 1893, and ending February 10, 1895?

A. Six to seven cents per pound.

(The testimony is objected to as immaterial and no cross-examination.)

R. A. JOHNSTON.

Sworn to and subscribed before me this first day of October, 1896.

FREDERICK M. OTT,
Notary Public.

256 Deposition of JOSHUA W. JONES resumed:

Q. 30. Question 15, propounded to you this morning, was a double question, and as your answer was a general negative, without indicating to which of the members of the question it related, your testimony upon that subject of inquiry does not appear to be clear; I will therefore ask you again whether or not you have ever used or seen used a smasher upon books made up of sheets which had not been dry-pressed.

A. Yes; I have seen it and have done it myself.

Q. 31. Seldom or frequently?

A. Oh, quite frequently. It was done on all work that was not considered of the finest. It was done on all State documents prior to the act of 1876 requiring the sheets to be dry-pressed.

Q. 32. As a matter of fact, were the type indentations removed by that operation?

A. No.

(The objection to the above testimony is the same as to that taken to the first witness.)

Cross-examination by Mr. MURRAY:

X Q. 33. Prior to the date of your patent, was there any process known of dry-pressing without first drying the sheets after they had left the printing press, and before they went into the press, for removing the indentations?

A. Not so far as book-work was concerned and sheets printed on both sides.

X Q. 34. Then, the only dry-pressing known was the dry-pressing you have described in your previous answer, which involved the step, first, of drying the sheets on racks before they were subjected to pressure. Is that right?

A. Prior to the invention of my machine, it was.

X Q. 35. Then, that process was what was technically known in the art prior to that time as dry-pressing. Am I again right?

A. It was the term applied to that process in this city and the western part of this State.

Dry-pressing, or by the word "dry-pressing," it was in contradistinction from all the other pressings that the sheets got, from the time they went through the printing press to the completion of the

book when bound. In some places it was called "smooth-pressing," and sometimes, I think, simply "pressing of the sheets;" and these terms were local, to a certain extent, but they all meant one and the same thing. I will state further. The word is also given in the Standard Dictionary.

X Q. 36. And they all meant that the sheets must be dried on racks before they went to any of the presses?

A. That was the custom.

X Q. 37. And the only custom you knew of prior to 1877?

A. Yes; and is the only custom that I know of to the present time, outside of my own process; and the greatest difficulty
257 that I had to surmount was to convince printers that I could do this work by my process without offset, both in this country and in England. In London, where I had a machine on exhibition, I applied to a party for the loan of some sheets that I might demonstrate that the work could be done by my process, and — no amount of persuasion would they consent, saying that they would not take the chances of having their sheets ruined. Further, I had virtually made a sale of a machine to a publisher, who countermanded the order when I was ready to ship the machine for fear that his work would be ruined by it; and that publisher is a large and prominent one, and I presume he still does his work by the process of drying and pressing them between boards I have no knowledge of his having purchased any machine, either from the W. O. Hickok Manufacturing Company or the Seybold Company, since that time.

X Q. 38. What time was that?

A. This was in 1880, to the best of my recollection, that I was in London; it may have been in 1881.

X Q. 39. I notice that the law of the State of Pennsylvania, which requires that the work done by the State printer should be dry-pressed, was approved the first day of May, 1876. That law must then have referred to the process of drying the sheets on racks, must it not?

A. I can't tell you to what the law referred or what was in the minds of the members of the legislature.

X Q. 40. But, so far as you do know, there was no other process known at that date, was there?

A. May, 1876, there was not.

X Q. 41. Was the hydraulic machine which the witness Mr. Suydam says was put in the State printing office in the fall of 1877, and which he also says was the first machine manufactured by you except an experimental device, sold prior or subsequent to the date you filed your application on which patent No. 204,741 was granted, which application was filed, as appears from the patent, October 24, 1877? I refer to the machine which is now in the State printing office and used by Mr. Busch.

A. In the first place, I do not know, from my own knowledge, what machine Mr. Busch uses. I sold to Mr. L. S. Hart an iron machine which was operated by hydraulic pressure, the date of which sale I cannot now fix, but I think it was after the date when

this application was filed, on October 24, 1877. The patent attorney who made this application for me was very slow in his work, and I know that I had given it into his hands a considerable time before the date it was filed in the Patent Office, and I may have had the iron machine in contemplation and perhaps had it built on or about this date. I can't say positively.

X Q. 42. You have taken out other patents on this same class of machines, the drawings of which more nearly resemble the machine you sold to the State printer, Mr. Hart, than does the drawing of the patent No. 204,741, have you not?

(Objected to as irrelevant and immaterial and not proper cross-examination.)

258 A. The drawing of patent No. 204,741 does not give a proper perspective of the first machine I sold to Mr. Hart. The first wooden machine I had with Mr. Hart did not have the bulk-compressor at the right-hand end, but it is more correctly illustrated on page 116 of plaintiffs' printed record. I have had manufactured and sold other machines, combining the same general features, with the exception of the modes by which the power was obtained. Yes; but they contain the same general features.

X Q. 43. How many patents of that kind have you taken out, being, as I presume, all of them improvements upon the structure claimed in the patent No. 204,741?

(Same objection.)

A. I can't say from memory just now how many patents I have taken out for improvements and for the bettering of the machine, but in all cases they contained the same process and were for the same purpose; some of them were simply with regard to the pumps of the hydraulic machines. The drawings may have shown the entire machine and pumps.

X Q. 44. But they were all included in the exclusive license which you granted to the Hickok Manufacturing Company, were they not?

(Same objection.)

A. Yes; all my patents.

X Q. 45. Among these was the patent 452,898, of May 26, 1891, which has been withdrawn from this suit, and also the patent No. 212,947. You can't tell how many others, can you?

(Same objection.)

A. No; I can't tell how many others at this time. I could get the information.

X Q. 46. From your testimony I assume that you considered the important discovery you had made was in the fact that type indentations could be removed by your process without first subjecting the sheets, after being printed, to the drying process and with-

out offsetting the ink while removing such indentations. Am I right about that?

(Same objection.)

A. I can't answer for your assumption, nor can I see how you can construe, from my testimony, such assumption.

X Q. 47. I assumed it from the fact that you have gone through a great many figures to show a saving effected in the use of your process in omitting the old process of drying the sheets on racks; but if I am wrong, will you please state what you consider the most important feature of your invention?

A. I have frequently gone through the estimate of saving of paper by my process over that of the process of pressing them prior to my process; also the other economical features by the use of my process in the matter of room, labor, time, and the more per-
259 fect work produced by my process. The whole combination are the features in my process over that prior to my invention.

(Same objection.)

X Q. 48. Yes; but we are taking an accounting now, and you have enumerated the different steps by which you have effected the different savings, and have specifically enumerated the savings effected by each step; and one of these steps was in taking the paper directly from the printing press to your machine without subjecting it to the drying process. Now, do you consider that of any importance; and, if so, how much?

A. It is of very much importance, and the cost for doing it is more than double the cost of doing the entire work on my machine—that is, the completed work that is required on my machine. Time, in my process, is a large factor. The sheets being tied up under pressure and the pressure retained, the sheets are stored until wanted for gathering. The only time required for the work on the machine to do five hundred sheets is but a few minutes. By the evidence that Mr. Busch gave, that the work that was done by him required only one-fifth of a boy's time, at the wages of three dollars and a half, this would be but one-half cent per five hundred. I think that Mr. Busch is mistaken in this, and I am free to say that he may double or treble that amount.

(The last part of the answer is objected to by counsel for defendant as not responsive to the question and as argumentative.)

X Q. 49. Did you think, when you made your application for a patent, that you were the first one to discover the fact that printed sheets, fresh from the printing press, could have their type indentations removed without offsetting the ink, without first subjecting the sheets to the old drying process?

A. I did think so, and I was so well convinced in my own mind that the very next day after I had first conceived the idea I ordered an experimental wooden machine to be made, which cost me either ninety-two or ninety-four dollars, and when it was completed and

taken to Mr. Hart's establishment I myself took from the fly boards of the printing press some sheets and had them folded and put them through my machine. I did this to satisfy myself that I was right in my conception.

X Q. 50. Is that wooden machine fairly represented by the figure at the left-hand side of the drawing of the patent No. 204,741?

A. It is more fairly represented by the illustration on page 116 of plaintiffs' printed record, with the exception that the lower and upper heads in this are each cast in one piece. The drawing on patent No. 204,741, figure 3, more fairly represents those parts.

X Q. 51. Is there anything said in the specification of the patent No. 204,741 setting forth the advantage obtained by pressing the sheets of signatures without first subjecting them to the drying process or any suggestion that the sheets should be so treated?

A. I don't know that it does. There is a copy of it here which is printed and can be ascertained by reading the specification.

260 If I had had an expert patent attorney, as either yourself or Mr. Jacobs, if it is not inserted I presume it would have been, for I knew it to be a fact when I gave him the case. But unfortunately he was one of those gentlemen who worked very slow, supposed he knew all, and I having very little, if any, experience in the taking out of patents, he had his own way of making the specifications and claims.

X Q. 52. Did you not discover the omission when he read the specification over before you signed and swore thereto?

(Objected to as irrelevant and immaterial.)

A. I can't say whether I did or not.

X Q. 53. When did you discover it, if not then?

(Same objection.)

A. I can't even fix that time; it may have been some time after I obtained the official letters patent.

X Q. 54. The specification and claim five enumerate all the other advantages of which you have just testified, claim five having as one step the omission of fuller-boards, but it does not refer to the omission of the drying process. Why did you not reissue the patent when you made the discovery?

(Same objection.)

A. I can't even answer that, only I was always under the impression, and I am yet, that a reissued patent was a weaker instrument than the original patent. I can't say where I got that impression from, but I think it was from the attorney who obtained this patent for me.

X Q. 55. In the testimony taken and printed in the complainants' record the advantage of the omission of this drying-process step is not referred to by yourself or any of the expert witnesses on behalf of the complainants, except the witness Thomas B. Penicks, whose testimony was given after the expiration of your patent, and who

was recalled, as appears on page 90, for the express purpose of giving this testimony. How do you account for these omissions?

(Objected to as irrelevant and immaterial.)

A. I can't account for it in any other way than that it must have been overlooked or the question not asked; whilst I knew from the start that this was a fact, but as for myself my knowledge of taking and giving testimony is very limited in patent cases.

(Recess until 7.15 p. m.)

X Q. 56. Throughout the testimony a good deal has been said about the advantages derived from your supposed invention from the fact of the t-pe indentations being concaved or convexed, whatever that may mean. Is there anything said in the patent about that?

(Objected to as irrelevant and immaterial.)

261 A. No; neither do I claim that they are produced by my process.

X Q. 57. Is there anything said in the patent about removing type indentations by your press?

A. I don't think there is, in those words. That is covered by the process of dry-pressing in the fifth claim, if I remember rightly.

X Q. 58. I understand you to say that you succeeded in practising your process to your own satisfaction on the first wooden press which you had made, which you say was like a cut on page 116 of complainants' record, except the heads which were like figure 3 of patent No. 204,741. Was the work done perfectly on that machine—that is, were the typ- indentations perfectly removed when the bundles were untied after being left under pressure? What I want to know is, was this a mere experimental machine or did it do practical work?

(Objected to as irrelevant and immaterial.)

A. It was a practical machine, and was practically used until it was superseded by the iron machine, and it did satisfactory work.

X Q. 59. In stating your knowledge of the prior art, did you mention all the processes that you knew to be old prior to your invention, as set forth in your patent here in suit?

A. I did.

X Q. 60. Did you know of a patent granted to W. R. Dingman, October 20, 1863, for a paper press and tying engine for compressing sheets of paper in bundles and tying them while under pressure to hold the pressure until the cords were released, which was testified to by both complainants' expert, Robertson, and defendant's expert, Mr. Hood?

(Objected to for the reason that the patent named was set up in defendant's answer as an anticipation of the Jones invention, and has been passed upon by the court, and for the further reason that it does not cover any machine for or process of dry-pressing printed

sheets, and is therefore irrelevant to the inquiry in the present proceeding.)

A. I would ask to what time that question refers.

X Q. 61. To the time you mention in your answer, in which you say that you are familiar with all the processes in use prior to your invention.

(Objected to as assuming what the witness has not stated.)

A. Prior to my invention, I would answer no. I did not have knowledge of such a patent.

X Q. 62. You know of it now, do you not, and have examined it and understand its mode of operation?

(Same objection as to question 60.)

A. I know of it now. I have looked over the same, but I can't now recall its particular operations or operation. If I had a copy it would recall, no doubt, the impressions I had in regard to it when I did look over it. This patent of W. R. Dingman, the title
262 is "Cotton press" (examining a copy of the patent which was handed to him). This press shows that it is for the purpose of tying paper in reams in a paper mill, and this is done prior to the printing. The paper is merely put in a commercial shape for handling or shipping outside of the mill. There are no boards used to protect the paper nor to distribute an even pressure over the entire surface of the bundle, and the bundle is tied only one way, and, to my mind, it could not be used in the shape of the drawing for the purpose of dry-pressing printed sheets, and the work could not be accomplished on this press. As I understand it, it is merely for holding the quires in place during the operation of tying the paper into reams. When the paper is removed from the press there is actually no retained pressure over the surface of the bundle.

X Q. 63. If a bundle of printed signatures were substituted for the ream of paper, and end boards used, would the pressure be retained after the bundle was tied and removed?

(Same objections.)

A. I don't think I should be called upon to bring out or endeavor to do so new inventions on old patents such as this is. Neither am I *am I* here to testify to the inventions of others.

X Q. 64. And you decline to answer the question; is that what I am to understand you to mean?

(Same objections.)

A. I don't believe that this machine could be made a practical machine for this purpose. It certainly is not in its present shape.

X Q. 65. It has a movable head, a stationary head, means for bringing the heads together, spaces in the head permitting the operator to pass his arm around the compressed bundle to tie the bundle while under pressure. Those are all the features of the Jones machine. Now, I simply ask you whether or not, if printed signatures were substituted in this machine for the plain, unprinted

sheets that are shown and described in the patent, and end boards placed above and below the printed signatures, the printed signatures compressed as this machine compresses the plain sheets, and tied while under pressure—whether or not the process would then be the same as the process practiced on your machine, and whether the type indentations would not be removed if the pressure was left on long enough.

(Same objections.)

A. I would say that this press is incapable of doing the work that is done by my machine and process. In the first place, I fail to see any guides for to even up against the head and back of the printed sheets; and as it is necessary to obtain proper results, the sheets have to be piled up evenly on the back and head folds all one way. The swell produced by the folds would cock the bundle, and, to my mind, utterly impossible to make a straight and even bundle, as when the pressure would be applied the sheets would fly out,
263 and the chances are they would fall on the floor. There is but one way of tying shown in this press, whilst in my press the sheets are tied crossways over the end board—that is, two ways.

X Q. 66. All you have said refers to your machine, about which I did not ask you. I was asking you simply about the process of your fifth claim, which says nothing about any machine or any parts of a machine. But suppose the signatures were smashed flat in a bulk-compressor, such as is shown in your patent, and described as a means for preparing your sheets for the press or for the process—in other words, "smashed," as your patent calls it—could they not be placed in the Dingman machine, between end boards, subjected to pressure, without the use of fuller-boards, and while under pressure tied in compact bundles, and then removed immediately from the press?

(Same objections.)

A. The smashing of the folds of the sheets by the bulk-compressor. This is merely done to reduce the swell of the folds in the head and back, particularly the head folds, as the heads of the sheets are very much more swelled than the back, excepting near the top, and in using the bulk-compressor it was only used to put the pressure on about one-half of the sheet as the foot of the sheets were held in the hand. This did not flatten out the sheets sufficiently to prevent them from cocking entirely. It was only to enable the more readily evening up of the sheets and handling them, and I don't believe that this process could be performed in this press. I presume, however, that the process might be practised in any press where you could get the front and back folds to keep in perfect alignment, if means were provided for retaining the pressure after the signatures had left the press, provided there was sufficient pressure, and that pressure distributed and held evenly over the entire surface of the sheets, and the strings were strong enough.

X Q. 67. Could the Jones process be practised on the John

Palmer press, a cut of which is shown at page 52 of defendant's record?

(Same objections.)

A. Not as this cut shows.

X Q. 68. Why?

(Same objections.)

A. Because the head and back folds of the sheets could not be placed and held in alignment; they would squash out when the pressure is applied.

X Q. 69. You examined that machine; heard the testimony of the three witnesses Schrank, McKee, and Davis as to its use for twenty years at the shop of John Palmer and his successor at Philadelphia, which use was described particularly in answer 22, on page 13 of defendant's record, by the witness Schrank. Please read that answer and tell us what step in the Jones process is omitted in the use described in that answer so far as the fifth claim is concerned or the use of the Jones press is concerned.

264 (Same objection, and plaintiffs' counsel calls attention to the fact that the answer referred to does not contain the full description by the witness Schrank of the use of the press in question, but that the manner of using it is to be gathered also from his other answers.)

A. As I said before, that any press which was so constructed that the sheets could be placed all one way, the process could be accomplished if there were means for the retaining of the pressure, for tying up the bundles, and thereby retaining the pressure by means of the tie, provided rigid end boards were used to distribute the pressure over the entire surface of the bundle. The operation, according to this answer to question 22, varies considerably from that in my process. He says first in using it the strings were laid in the bottom block or platen. In my process the first thing that is done is putting in a rigid end board. Schrank says, "A piece of paper laid on top of the string, a piece of pasteboard laid on top of the paper." In my machine the sheets are filled in the trough, above the end board. Schrank says the gathered books or signatures piled up in bundles of ten and a piece of pasteboard on top and a heavy paper on top again. The string was then brought over the top of the pile, the top block was then screwed down and the pressure applied. The slack of the string was then taken up and the bundle tied and removed. In the Jones process, after the sheets are filled into the trough and end board is then placed at the top of the sheets, pressure applied, and the cords passed around the sheets and tied, then removed from the press. The operations dispensed with in the Jones process is the laying of the strings in the bottom block, the placing of a piece of paper, the placing of pasteboard on top, and a heavy piece of paper. These are not done in the Jones.

I can't say that, as far as the operation is concerned, I can see any

steps that are omitted as he describes it. There are other parts of his testimony, if I remember correctly, he says the sheets or books were reversed head and tail. If I am correct, it would not accomplish the process.

X Q. 70. Your patent does not say whether the sheets should be laid all one way or head and tail, as I remember. Examine it and point out where there is any statement in it as to how the sheets must be laid in order to carry out your process.

(Objected to as irrelevant and immaterial, and for the further reason that the Palmer press and process were set up in defendant's answer and passed upon by the court, and the question thus decided cannot be reopened in this proceeding.)

A. No; the patent does not say so, but the drawings show this. In figure 2 you will find at the lower right-hand corner a jagged line; also the upper line is quite irregular, whilst the lower line of the bundle is comparatively straight. Such a bundle cannot be made by reversing the sheets head and tail alternately in bunches.

X Q. 71. A bundle of printed signatures subjected to pressure and tied up between end boards in the Palmer press would be protected from the twine cutting into the bundles and there would be no waste after they were tied up, and they could be as conveniently stored as could the bundles tied up in the Jones press; is that correct?

265

A. If it were capable of doing the work in the manner that the Jones press does or the Seybold, to my mind—that is, the ends of the bundles were protected with rigid end boards—there would be no further waste of sheets till they reached the completion of the book.

X Q. 72. And there would be as much saving of the paper in practising the process described by Schrank, McKee, and Davis with the Palmer press as there would be by the Jones process on the Jones press, would there not?

A. To my mind, as the process is described by Schrank, McKee, and Davis, I should think not.

X Q. 73. In the answer before referred to Schrank describes the process briefly as subjecting gathered books or signatures to pressure between pasteboard on top and bottom, and, while under pressure, tying them into compact bundles and then removing the bundles from the press. Now, what difference is there between such a bundle and the bundle of the fifth claim of your patent? And, if there is more waste in the one than the other, give your reasons why.

(Objected to for the reason that the question assumes what the witness Schrank did not say, to wit, that the sheets were gathered into "compact bundles.")

A. As testified by Mr. Schrank, to my mind, they were not in compact bundles, as at one place he says, in his answer to question 28, "The bundle was removed. We would straighten it up by knocking it down on the floor." This cannot be done, the straight-

ening up of a bundle that is compact. If a bundle is tied up under pressure sufficient to make it solid and protected by end boards, there can be no waste whilst remaining in a compact bundle.

X Q. 74. Does your patent say how compact your bundle must be or what amount of pressure must be applied to it?

A. I think not.

X Q. 75. Well, try to remember that I am speaking about your patent and not about the way your process has been practised by persons who have been taught by you outside of your patent. Your patent simply says that the bundles shall be subjected to pressure between end boards, and that while under pressure tied and immediately removed. Schrank says that the Palmer bundles are subjected to pressure, and, while under pressure, tied and removed from the press. Now, why is the one a compact bundle and the other not a compact bundle, especially when your patent drawing shows a wooden frame with a screw to drive the movable platen, just as the Palmer press does, and your specification does not specify whether your end boards shall be wooden end boards, metal end boards, or any particular kind of end boards?

266 A. In the first place, on the Palmer press there could be but very little pressure exerted, and a bundle which would have to be piled up in bunches alternately reversed, with the heads and back folds one bunch one way, then another bunch laid opposite, with the head and back folds opposite to the first, and so on until the pile was complete, could not be put in a compact bundle on the Palmer press nor upon any other press, and this is the manner in which the bundles were made in the Palmer press. Again, if bundles of sheets were so made and subjected to great pressure, such as is required by my process, the sheets would be more or less injured by reason of the folds pressing irregularly over the front and foot edges, thereby not removing the swell of the folds, but would virtually make the sheet at the back folds bend, which would form a curve that would be almost impossible to straighten out, and it would therefore also not make a compact bundle. As to end boards my patent says, "Said end boards are made of any suitable material affording strength and rigidity."

X Q. 76. The question was why a collection of printed sheets subjected to pressure in the Palmer press and while under such pressure tied into bundles with end boards and then removing them from the press would not make a compact bundle, while subjecting printed sheets of paper to precisely the same operation in a Jones press would make a compact bundle?

(Objected to because assuming that the sheets are subjected to precisely the same operation in a Jones press as in the Palmer press.)

A. The Palmer press is incapable of making a compact bundle, by reason that you cannot place the sheets in that press in such a way as to make a compact bundle. The only way you could make a bundle of folded sheets in that press was by reversing the sheets in bunches alternately, and the edges would project. Bundles with

projecting edges would not, in the sense that I use the term in my process, be compact bundles.

X Q. 77. You assume that the Palmer sheets or signatures were placed in the press as they came from the folder. Suppose they were subjected to the action of a smasher before they were placed in the press, would the Palmer press then make a compact bundle out of such smashed sheets?

A. Under those conditions, the sheets being smashed perfectly flat and solid and the air displaced between the sheets, I think it would be capable to place such sheets in the Palmer press and tie them into bundles; but the pressure would not have been sufficient to keep the sheets so retained for any length of time, especially in large editions, where they have to be stored until the completion of the work. The bundles would become loose by reason of the light pressure which could be exerted by the Palmer press on them before tying. The bundles would fall apart and sheets become scattered over the floor, and many wasted in this way by dust, soiling, and crumpling.

(Adjourned to October 2, 1896, at 9.30 a. m.)

267 OCTOBER 3, 1896—9.30 a. m.

Examination resumed pursuant to adjournment.
Present: Same counsel.

Cross-examination of JOSHUA W. JONES by Mr. MURRAY continued:

(Witness adds to his answer to cross-question 77:)

I wish to add that a bundle tied up after the sheets were smashed, that this would be after the sheets had gone through the process of smashing, and would have to be done after all the intermediate steps between the printing and smashing had been gone through with and in which all the waste occurs. After the sheets are gathered into books there is no waste, nor can there be any. The steps described by Schrank were taken after the sheets were dried, pressed, and gathered into books and smashed. The Palmer press is incapable of performing the work of making a compact bundle prior to the smashing; even then it would not be practicable, as it has no guides to even the sheets up against and hold them in alignment, in consequence of which the sheets would slip and squash out, and it would smear and blur the printing. The guides in my press prevent this, and there are none in the Palmer press.

X Q. 78. Mr. Francis E. Davis, who testified to the use of the Palmer press and who had seen it daily, says, in answer to question 36, on page 24 of defendant's printed record:

"Q. 36. But you know that bundles were tied in the Palmer press before the pressure was taken off, do you not?

"A. They certainly were; that is the object of the press—to make the bundle as compact as possible."

Now, are you willing to say that the bundle of signatures put in the Palmer press, as Mr. Schrank and Mr. Davis describe, could

not be tied in compact bundles between end boards while the pressure was on and then removed from the press?

(Counsel for plaintiffs objects to this method of singling out special passages from the testimony of the witnesses Schrank, Davis, and McKee, and insists that if the opinion of the present witness is desired with regard to the mode of operation and efficacy of the Palmer press the whole of the testimony of those witnesses should be placed before him and not merely isolated passages.

Counsel for the defendant replies that the witness' counsel is able to take care of him; that he has a right to re-examine after the cross-examination is closed, and that he can then put in the whole or a part of these witnesses' testimony; and defendant's counsel insists that this line of cross-examination of an adverse and interested witness is entirely proper.)

A. Not as Mr. Schrank describes it on defendant's record in his answer to question 25:

"Q. 25. How were the books arranged in the bundle, with reference to each other?

"A. They were piled up back and front or head and tail."

268 I say that such a bundle could not, in the sense of my claim 5 of my patent, and would not be a compact bundle.

X Q. 79. As I understand your testimony, on page 22, you never charged any royalty for the use of the fifth claim of your patent from the parties who had purchased machines from your licensee, the Hickok Manufacturing Company; that is right, is it?

A. That is so.

X Q. 80. And that license also included your patent No. 212,947, as shown by the form of license on page 9 of the record, did it not?

(Objected to as irrelevant and immaterial.)

A. That is so.

X Q. 81. Then when you received a stipulated royalty agreed upon between yourself and the Hickok Manufacturing Company for each machine it sold you had no further claim for royalty from the Hickok Manufacturing Company, the purchaser of the machine, nor from any subsequent purchaser who might buy the machine from the party to whom the Hickok Manufacturing Company had sold it; that is correct, is it not?

(Same objection.)

A. Not exactly, as I understand it. I had no further claim upon the Hickok Manufacturing Company or the party who purchased the same. The purchaser was licensed to use the machine in a certain place, and if he removed from that place to another I agreed to transfer the right to use said process to the new shop or bargainee. Under this license I did not give the right to sell the machine or transfer the license to any other party. Whether I could have collected a license fee from another party than the one to whom the machine was sold I do not know. I never did it. This applies to the process.

X Q. 82. Had the Hickok Manufacturing Company sold the machine to Mr. Busch instead of the Seybold Machine Company, you would have had no claim against him for damages or profits, would you?

(Same objection.)

A. No.

Redirect examination by Mr. JACOBS, without waiving objections:

Q. 83. You have been asked on cross-examination with respect to the Palmer press as a means for bundling printed sheets and saving waste. Assuming, now, that it could do all that is claimed for it, is there, under the old fuller-board process of dry-pressing, any waste of sheets prior to the tying of them up in bundles?

(Objected to as immaterial.)

A. There is. The sheets become torn and soiled in bandling them, through the drying process and the placing them between the boards, and up to the stage of folding is where the great
269 waste occurs. If the sheets are dry-pressed before folding, and then tied up with protecting boards to protect the sheets on the ends of the bundles, providing this protection is sufficient to prevent the cutting of the edges of the sheets by the twine, the item of waste of the sheets used is the only saving not accomplished by the tying of the bundles by hand. Of course, I refer now to that if the sheets were tied in a press under pressure.

Q. 84. What proportion, under the old process, of the waste of sheets occurs prior to the bundling?

(Same objection.)

A. Say a sheet twenty-six by forty, sixty pounds to the ream, about eight such sheets would be eight out of the ten which are allowed to the printer, are wasted.

Q. 85. You mean, by your last answer, wasted prior to the bundling, do you?

A. I do.

Q. 86. The defendant, Mr. Busch, in his answer to question 27 says: "Mr. Bigelow said he would have sold me one to do the work for five hundred dollars and saved me all this trouble."

Do you know what Jones machine the Hickok Manufacturing Company was selling for five hundred dollars at that time?

A. The steam screw-power signature press shown in cut on page 115 of plaintiffs' record.

Q. 87. I infer from Mr. Busch's answer, taken in connection with the question to which it was given, that the machine referred to was one of the same size and to do the same work that was done by the Seybold press which he had. As you were at Mr. Busch's establishment several times and saw the work carried on there with the Seybold machine, please state whether or not the Jones steam screw-power signature press referred to in your answer to question

86 is a machine upon which about the same amount and kind of work can be done as upon the Seybold machine which Mr. Busch had.

(Objected to for the reason that it does not appear that that was the machine referred to by Mr. Bigelow, and therefore irrelevant and incompetent, as calling for secondary evidence.)

A. As to the same size, the machine will take in as many sheets as the Seybold. The Seybold is capable of taking in a larger sheet, but by reason of this it would not be so convenient for handling the sheets through it, as the space around the rod-trough in the Seybold machine is much larger, and therefore makes it more unhandy to fill and tie. It will do the work of Mr. Busch, and about the same amount as can be done on his machine. This steam screw-power press is especially adapted for the size of work that is done for the State by him. The number of sheets pressed, either in the Jones press or the Seybold, in a given time, depends entirely upon the skill and capacity of the operator; as the time for applying the pressure, in either case, is a very small and in-
270 finitesimal factor, in proportion to the time required for getting the sheets ready, filling them in the press, tying them into compact bundles, removing them, and marking the signature on the end. I refer, when I say "around the rod-trough," to that part across the machine, not in the length.

Q. 88. Was there any cheaper Jones machine, then, manufactured which would do the work of Mr. Busch?

A. I think not. It might possibly have been done on the hand screw-power machine. This, however, would not be an economical machine where so large a quantity of work is done as by Mr. Busch, and the wages, distributed over a period of from one to two years for the labor required to do Mr. Busch's work on this machine, would make it a very much more expensive machine. I question whether his work could be done on two such hand machines.

Q. 89. Do you remember the price at which the hand machines sold at that time?

A. No, sir; I do not.

Recross-examination by Mr. MURRAY:

X Q. 90. The hand machine referred to is the one illustrated on page 116 of the complainants' printed record, is it not?

A. Yes.

X Q. 91. Throughout your testimony, in comparing the processes of preparing printed sheets ready to be bound, you have always referred to the wet process as practised by Mr. Thomas B. Penicks, who, at the time he gave his testimony, was operating fourteen of your hydraulic machines instead of the dry process referred to in your patent, have you not? I will read from Mr. Penicks' answer to question 1, when he was recalled, on page 90 of complainants' printed record:

"In the Jones process the sheets do not have to go through the

process of drying, but are folded wet as taken from the press and pressed wet."

A. This refers to sheets that were dampened; the paper was dampened before printing. There is some of the work in the Government Printing Office that I think is still printed on wet paper, but there is much that is printed on dry paper. Mr. Penicks referred to that which was printed on damp paper. My interpretation of "wet" covers both paper printed wet or dry. On the wet paper the paper and the ink are both wet. Dry-paper printed sheets the printing is wet, in the same sense as a painter will designate wet paint and dry. Freshly painted and before dry painters call "wet."

X Q. 92. Where, from Mr. Penicks' testimony, do you find that part upon which you base your assumption that he was referring to paper dampened or wet before printing?

A. In his answer to question 1, page 90, of the plaintiffs' record, in these words: " * * * the paper being wet."

X Q. 93. Does that refer, in your opinion, to the wet ink
271 upon the paper after it leaves the printing press, as he states, or to the paper being wetted before it was printed?

A. To both, as the drying of the wet paper would naturally also dry the ink.

X Q. 94. In Mr. Penicks' answer to question 3, page 69, he describes the ponderous old process of dry-pressing in substantially the same manner as you and all the witnesses called here have described it, and states that all the work was printed in the press-room and then forwarded to the drying-room for dry-pressing, and at no place do I find, either in his testimony or that of any of the other witnesses, any statement that paper required to be wet or dampened before printing on any of the modern printing machines. I will ask you, now, if you know of any modern printing machine used in book-work that does not print on dry sheets; and, if you do, state where it is located.

A. I would state that any printing press, whether it be old or modern, will print on dry paper—even old Ben. Franklin's press was capable of printing on dry paper. The question of printing on either wet or dry paper I consider is the fad of the printer. I know that the wetting of sized and supercalendered paper, such as is furnished by the State to Mr. Busch, would injure the surface of the paper and destroy the gloss of the calendering. The printing of paper dry is not a discovery of recent years; therefore I cannot say where there is a press or any party who do their printing on wet sheets, unless it is that the Government may do it on their large editions, such as the Agricultural Report, which is printed on what is known as machine-finished paper of the cheapest quality and grade of book paper.

JOSHUA W. JONES.

Sworn to and subscribed before me this second day of October, 1896.

FREDERICK M. OTT,
Notary Public.

RICHARD MILES, being produced, sworn, and examined, saith:

Examined by Mr. JACOBS:

Q. 1. State your age, occupation, and place of residence.

A. Fifty-four years of age; I am chief clerk of the W. O. Hickok Manufacturing Company; residence, Harrisburg, Penna.

Q. 2. How long have you occupied that position?

A. I couldn't state exactly that. I have been there since 1879, and have gradually gone up. I couldn't tell you when I became chief clerk. I think it has been about ten years.

Q. 3. Whose duty is it in that establishment to keep track of the cost of articles manufactured and furnish the data for estimates thereof when required?

A. It is my duty.

Q. 4. Are you familiar with the "Jones steam screw-power
272 signature press," a cut of which, printed on page 115 of complainants' printed record, I now hand you?

A. I am.

Q. 5. Please state the cost of manufacturing that machine, including the materials, labor, and so forth, at the Hickok establishment in 1893.

A. I have no accurate data of any machines built in 1893. I have accurate data of machines built within four or five months, the cost of which was one hundred and thirty-eight dollars and sixty-eight cents each. We now have some improved appliances which we did not have in 1893, and the cost of materials at the present time is slightly less, and from comparisons that I have been able to make, to the best of my judgment and belief, the cost of manufacture in 1893 was about fifty dollars greater on each press than in 1896.

Q. 6. Does the estimate for 1893 include material as well as labor?

A. Yes, sir.

Q. 7. What Jones signature press cheaper than the steam screw-power signature press was the Hickok Company manufacturing in 1893?

A. We manufactured a hand-power machine.

Q. 8. Was it the one shown on page 116 of complainants' printed record?

A. Yes, sir.

Q. 9. What was the price of the hand-power machine in 1893?

A. Three hundred and fifty dollars.

Q. 10. Were these two, to wit, the steam screw-power and the hand-power presses, the cheapest Jones signature presses manufactured by the company at that time?

A. Yes, sir.

Q. 11. Can you tell us, approximately, the price in 1893 of hydraulic standing presses, taking in a sheet of twenty-six by forty inches and having an opening between the head and platen of, say, four or five feet?

(Objected to as immaterial and irrelevant.)

A. At that time we were selling a press taking a sheet twenty-six by forty; the distance between the top of the platen when down and under side of cap forty-eight inches, for four hundred and eighty dollars without the pump, and nine hundred and sixty dollars including the pump. This price did not include any connections between the press and the pump, which were extra, and always made to suit special requirements.

(Cross-examination waived by counsel for defendant.)

RICHARD MILES.

Sworn to and subscribed before me this second day of October, 1896.

FREDERICK M. OTT,
Notary Public.

273 In the Supreme Court of the District of Columbia. In Equity.

No. 15391, Docket No. 36.

HARRISBURG, PA., *Oct.* 2, 1896.

I hereby certify that the witnesses whose depositions are hereto attached, namely, C. M. Busch, Charles A. Suydam, Joshua W. Jones, R. A. Johnston, and Richard Miles, were severally duly qualified by me and examined at the time and place set forth in the deposition of each, and that they subscribed their several depositions in my presence.

Witness my hand and notarial seal the day and year above mentioned.

[SEAL.]

FREDERICK M. OTT,
Notary Public.

Endorsed on cover: District of Columbia supreme court. No. 903. Clarence M. Busch, appellant, *vs.* Joshua W. Jones *et al.* Second addition to record per stipulation of counsel. Court of Appeals, District of Columbia. Filed Oct. 2, 1899. Robert Willett, clerk.

274 THURSDAY, *November 9th, A. D.* 1900.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK MANUFACTURING Company. } No. 903.

The above-entitled cause was argued by Mr. George J. Murray, attorney for the appellant, and was submitted to the consideration of the court on the record and briefs by Mr. M. W. Jacobs, attorney for the appellees.

275 CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK MANUFACTURING Company. } No. 908.

(Mr. Chief Justice ALVEY delivered the opinion of the court:)

This appeal is brought here from a final decree of the court below, passed in a cause instituted by the appellees, Joshua W. Jones and The W. O. Hickok Manufacturing Company, against Clarence M. Busch, the appellant, to have the latter restrained from further infringement of certain patents issued to the said Joshua W. Jones, and for an accounting as well for the damages suffered by the appellees as for the gains and profits derived to the appellant from the infringements of the patents. The patents were for improvements in press and process by which was effected the pressing of folded sheets or signatures of printed matter by first subjecting them to pressure, then tying them between boards in a compact bundle and removing them from the press and allowing them to remain tied a sufficient length of time to efface the impressions produced by printing—a process known to printers and bookbinders as dry-pressing.

The bill was filed on the 10th of March, 1894, alleging the infringements of two patents issued to appellee Jones, numbered respectively 204,741 and 452,898, the former dated the 11th day of June, 1878, and the latter dated May 26th, 1891, both having relation to and intended to secure the exclusive right to the said Jones, as the first, original, and true inventor and discoverer of certain new and useful improvements in bookbinders' dry-press and sheettie, and of a certain new and useful process for treating folded sheets in dry-pressing, &c., described in said letters patent, to make, use, and dispose of the appliances and process of said invention and discovery. The patent No. 452,898, dated May 26, 1891, embraced smashing and tableting machines, but that patent is out of the case,

276 there being no attempt by the complainants to show by proof that that patent had been infringed as distinguished from patent No. 204,741. The whole controversy in this case therefore is based upon the alleged infringement of patent No. 204,741.

The defendant Busch by his answer denied that the complainant Jones was the first and original inventor or discoverer of the device or process described in patent No. 204,741. He also denied that he had in any manner infringed any patent right owned by the plaintiffs or either of them, or that he had derived profit or gains from any such alleged infringement. He denied on information and belief that said Jones was the first, original, and true inventor of the improvements or process set forth in the patent and claimed therein, and he also denied that the alleged improvements and process were new or useful, or that the same had not been known and used by others prior to the alleged invention thereof by said Jones, or that the same had not been patented or described in any printed publication prior to his alleged invention thereof, and he further denied that the alleged improvements or process had not

been in public use or on sale for more than two years prior to his application for letters patent therefor. The defendant alleges that patent No. 204,741 is void because it required no invention to produce the alleged improvements therein claimed, and that the alleged improvements described in said patent are not patentable inventions within the meaning of the patent laws, but if such alleged improvements were patentable under the law, still the defendant insists that the patent is void for that the alleged inventions and the same principles and combinations and every substantial and material part thereof shown, described, and claimed therein as new were, prior to the date of the application for said patent and the date of said alleged inventions by said Jones, shown, described, and set forth in certain publications and patents specifically mentioned and referred to in the answer. The defendant says that the press he is using is a patented one, but differs radically in construction and mode of operation from the alleged invention shown, described, and claimed by the plaintiff Jones. The defendant denies
277 the right of the complainants to any injunction on the allegations of the bill.

Replication was entered, and the parties proceeded to take evidence, and a considerable volume of evidence was produced, consisting largely of expert testimony—that is to say, the testimony of witnesses skilled in and familiar with the art to which the subject-matter of the patent relates. The cause came on to hearing, and the court below, by an interlocutory decree of the 11th of February, 1896, declared and decreed that the patent No. 204,741, granted to Jones, for bookbinders' dry press and sheet-tie, was good and valid in law; that Jones was the original and first inventor of the improvement and process described and claimed in the patent; that the W. O. Hickok Manufacturing Company was the sole and exclusive licensee under the patent, and that the defendant had infringed said letters patent and the exclusive rights of the complainants thereunder, and particularly the patent right embraced in and covered by the 1st, 2nd, and 4th claims of said patent, and also by practicing the process embodying the improvement specified and particularly claimed in the 5th claim of said letters patent.

It was also adjudged and decreed that the plaintiffs should recover from the defendant the profits, gains, and advantages which said defendant had received or made or which had arisen and accrued to him by reason of any infringement of said patent rights since the date of said patent, and also the damages which the plaintiffs had sustained by reason of such infringement, to be assessed according to law; and for the purpose of taking such account of the gains, profits, and advantages and of ascertaining the damages proper to be assessed, the case was referred to the auditor of the court, with directions to state the account and report the same to the court, and it was also ordered and decreed that a perpetual injunction be issued, as prayed in the bill.

The claims in the patent that were by the preceding decree adjudged and determined to have been infringed by the defendant were the following:

278 "1. In a printer's and bookbinder's dry press and sheet-tie, the compressing heads C D D′ and B^2 F′ F, constructed with cross-ways L^2 L^2, centrally arranged through them, substantially as and for the purpose herein set forth.

"2. The inclined press bed, H H^2, provided with longitudinal slots, H^1 H^1, in its sides, in combination with the press heads, B^2 F′ F and C D D′, having through them the cross-ways, L^2 L^2, correspondingly arranged with said slots, substantially as and for the purpose set forth."

"4. In combination with the dry-press bed, H H^2, the device of a set of removable ledges, *f*, or a set of adjustable guide-rods, *m*, arranged as and for the purpose set forth."

These three claims have reference to the structure and arrangement of the press machine. The following claim is descriptive of the process by which the dry-pressing is effected without the use of fuller-boards:

"5. The process herein described for treating folded printed sheets of paper in dry-pressing, the same consisting of subjecting a collection of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles with end boards, then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete dry-pressing."

Under the reference made by the decree, the auditor examined all the facts of the case and made a full and clear report of his findings from the facts and stated an account accordingly. He ascertained the amount due the plaintiffs from the defendant to be $3,491.70, with interest from the 26th day of March, 1897, the date of filing the report and account in court. To this account thus stated the defendant excepted upon various grounds, but the exceptions were all overruled by the court, and the report and account were ratified and confirmed; and afterwards—that is to say, on the 4th day of April, 1899—the court passed a final decree, whereby
279 it was adjudged and decreed that the previous interlocutory decree of Feb. 11, 1896, under which the account was stated, should be confirmed and made final, and that the defendant should pay to the plaintiffs the amount ascertained by the auditor, with costs. It is from this latter decree that the appellant has appealed.

In support of his appeal he has assigned eight errors. These alleged errors are the following, stating them in the order in which they have been assigned:

1st. That the court below as a court of equity had no jurisdiction to take cognizance of the case, because there was complete remedy at law, and even if the bill of complaint did show ground for the exercise of jurisdiction, because an injunction was prayed, yet, as no steps were taken to procure an injunction during the life of the patent, the remedy at law was adequate, and the court, as a court of equity, should not have proceeded with the cause.

2nd. That the patent in suit, so far as the 5th claim is concerned, is void, because even if the alleged process was new, it is apparent that it was the mere function of the machine that was claimed.

3rd. That the patent is void for want of novelty by reason of anticipation by the patents set up in evidence and by reason of public and common use, not only of the combinations covered by claims 1, 2, and 4, but also by reason of the process practiced on the Palmer press years before the application for the patent by Jones.

4th. That the patent is void for want of invention, so far as the 5th claim is concerned, because the process had been used prior to the application by Jones for patent, without the use of any machine to assist in carrying out the process.

5th. That the claim 4 of the patent is void for ambiguity.

6th. That the single machine used by the defendant, in view of the state of the art preceding the Jones invention, did not infringe either of the claims 1, 2, and 4.

280 7th. That the court should, on the motion of the defendant, have vacated the interlocutory decree after the auditor had made his report showing that there were no damages to be assessed.

8th. And finally that the court erred in overruling the exceptions to the auditor's report and account and in adopting the principles upon which the account was stated.

It is quite apparent that several of these assignments of error are but different modes of stating substantially the same proposition and will not therefore require separate and distinct consideration.

1. The question of jurisdiction raised by the appellant we can hardly regard, in view of the repeated decisions of the Supreme Court of the United States upon the subject, as being open for discussion upon the facts alleged and shown in proof in this case. If it were true that the suit had been begun so recently before the expiration of the patent that under the rules and practice of the court no injunction could have been obtained before such expiration, the bill should have been dismissed for want of equity jurisdiction; but the bill in this case was filed on the 10th of March, 1894, and the patent did not expire until the 11th of June, 1895, about fifteen months after suit brought. The pleading had been made up and the plaintiff's *prima facie* proof taken by Sept. 24, 1894, and the further delay in the taking of the proof seems to have been at the instance of the defendant. Under such circumstances the jurisdiction of the court had attached, with ample time for its exercise; and at most it was a discretionary matter with the court below whether the bill should be retained and the cause be proceeded with, notwithstanding the expiration of the patent on the 11th of June, 1895, or to dismiss the bill and turn the parties over to their action at law. The court exercised its discretion in favor of retaining the bill and proceeding to take the account; and this court, being in the exercise of appellate jurisdiction, will not review the mere discretionary determination of the court below of such question

281 unless it were shown that the exercise of the discretion was in a manner clearly illegal. That has not been shown in this case. Clark *vs.* Wooster, 119 U. S., 322, 325.

In the case just referred to, of Clerk *vs.* Wcoster, it was said by the court, speaking by Mr. Justice Bradley: "The jurisdiction had

attached, and although, after it attached, the principal ground for issuing an injunction may have ceased to exist by the expiration of the patent, yet there might be other grounds for the writ arising from the possession by the defendants of folding guides illegally made or procured whilst the patent was in force. The general allegations of the bill were sufficiently comprehensive to meet such a case. But even without that, if the case was one for equitable relief when the suit was instituted, the mere fact that the ground for such relief expired by the expiration of the patent would not take away the jurisdiction, and preclude the court from proceeding to grant the incidental relief which belongs to cases of that sort. This has often been done in patent causes, and a large number of cases may be cited to that effect, and there is nothing in the decision of Root *vs.* Railway Co., 105 U. S., 189, to the contrary." Other cases are cited to the same effect. "It is true that where a party alleges equitable ground for relief, and the allegations are not sustained, as where a bill is founded on an allegation of fraud, which is not maintained by proofs, the bill will be dismissed in toto, both as to the relief sought against the alleged fraud, and that which is sought as incident thereto."

In that case it was held that, although there were only three days for the patent to run, it was within the discretion of the court to take jurisdiction, and having done so, without enjoining the defendant, it was competent for it to proceed to grant the other incidental relief sought by the bill.

And so in the case of Beedle *vs.* Bennett, 122 U. S., 71, it was held that if a bill be filed in equity to restrain an infringement, and be filed before the expiration of the patent, the jurisdiction
282 of the court is not defeated by the expiration of the patent by lapse of time before the final decree. In that case the court said that, "as the patent was in force at the time the bill was filed and the complainants were entitled to preliminary injunction at that time, the jurisdiction of the court is not defeated by the expiration of the patent by lapse of time before final decree." But it is clear that if the bill upon its face or the evidence produced gives rise to the fair presumption that the suit was instituted in equity merely to evade an action at law, the bill will not be entertained. Root *vs.* Railroad Co., 105 U. S., 189, 211. For it is now a well-settled principle that a bill in equity for a naked account of profits and damages against an infringer of a patent cannot be maintained; that such relief ordinarily is incidental to some other equity, the right to enforce which secures to the patentee his standing in court, and that the most general ground for equitable interposition is that which tends to insure to the patentee the enjoyment of his specific right by injunction against a continuance of the infringement. 105 U. S., 215, 216.

It is contended, however, that the court below was without equity jurisdiction to take cognizance of the case, because it is shown that the defendant was not a manufacturer of the invented article, but a mere user of a single machine, and that damages could be easily measured by the difference between the cost and the selling price of

that machine without reference to a master to take an account, and therefore the remedy at law was adequate and complete; but this contention cannot be supported. It was not the press only, but the process also, covered by claim 5, used, it is true, in connection with the machine, that were being used by the defendant in alleged violation of the rights of the plaintiffs under the patent, and it was the right of the plaintiffs to have such user restrained, down to the time when the patent expired.

In the case of Mills Manf. Co. *vs.* Whitehurst, 56 Fed. Rep., 589, 594, where a similar defense was set up and relied on by an
283 infringer, the court, in disposing of the defendant's contention, said: "The second defense, that the complainant has an adequate remedy at law, and therefore is not entitled to sue in equity, must be overruled. * * * The defendants are users, not manufacturers, but if infringers they may be enjoined, and that disposes of the objection to the jurisdiction." And the same principle is laid down as clear law by the Supreme Court of the United States in the case of Birdsell *vs.* Shaliol, 112 U. S., 485, 487.

We discover no want of jurisdiction in a court of equity to entertain the bill in this case, and to administer the relief therein prayed.

2. The next contention is that the patent, as to claim 5 therein, such claim being for process only, is simply void, because it is for the mere function of the machine, and therefore not patentable. This contention presents an important question, and the defendant relies in support of his contention upon certain decisions of the Supreme Court of the United States, and especially the decisions made in the recent cases of Risdon *vs.* Locomotive Works *vs.* Medart, 158 U. S., 68, and Westinghouse *vs.* Boyden Power Brake Co., 170 U. S., 537. In these cases there is some general phraseology used in the opinions of the court which, if considered in a general broad sense, might be taken to give some color to the contention of the defendant; but we do not think that upon consideration of the entire opinions in those cases, *that* any such proposition was intended to be decided by the court as that contended for in this case. This is manifest, we think, from what was said by the court in the case of Westinghouse *vs.* Boyden Co. After referring to the previous cases in which the subject had been considered, the court said: "These cases assume, although they do not expressly decide, that a process to be patentable must involve a chemical or other similar elemental action, and it may be still regarded as an open question whether the patentability of processes extends beyond this class of inventions. Where the process is simply the function or
284 operative effect of a machine, the above cases are conclusive against its patentability; but where it is one which, though ordinarily and most successfully performed by machinery, may also be performed by simple manipulation, such, for instance, as the folding of paper in a peculiar way for the manufacture of paper bags, or a new method of weaving a hammock, there are cases to the effect that such a process is patentable, though none of the powers of nature be invoked to aid in producing the result;" and the court, after citing several cases in support of the proposition stated, pro-

ceeds to say: "This case, however, does not call for an expression of an opinion upon this point, nor even upon the question whether the function of admitting air directly from the train pipe to the brake cylinder be patentable or not, since there is no claim made for an independant process in this patent, and the whole theory of the specification and claim is based upon the novelty of the mechanism."

Now, it is quite clear, we think, that the operation described in claim 5 of the patent under consideration requires the effective force of a mechanical structure, and though the result produced be the effect of a process used in connection with the machine, yet that result can only be produced by the combination of machine force and a skilful manipulation of the material to be operated upon according to the process, aided by the co-operation of the principles of natural law. There is no chemical action involved, it is true, but there is an elemental action, that of tight cohesion under a high degree of pressure effected by a special mechanical contrivance, and to produce new and beneficial results by such means or process would seem to be clearly within the reason and contemplation of the patent laws.

This question would seem to be settled by express decision. In the case of Cochrane *vs.* Deener, 94 U. S., 780, a case of infringement and where the question of the patentability of a mechanical process was presented, Mr. Justice Bradley, delivering the opinion of the court, said: "That a process may be patentable, irrespective
285 of the particular form of the instrumentalities used, cannot be disputed. If one of the steps of a process be that a certain substance is to be reduced to a powder, it may not be at all material what instrument or machinery is used to effect that object, whether a hammer, a pestle and mortar, or a mill. Either may be pointed out, but if the patent is not confined to that particular tool or machine the use of the others would be an infringement, the general process being the same. A process is a mode of treatment of certain materials to produce a given result. It is an act or a series of acts performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process may or may not be new or patentable, whilst the process itself may be altogether new and produce an entirely new result. The process requires that certain things should be done with certain substances and in a certain order, but the tools to be used in doing this may be of secondary consequence."

In the case of Tilghman *vs.* Proctor, 102 U. S., 707, it was held that a valid patent may be granted for applying and carrying a well-known principle into practical, useful effect by means of a mechanical contrivance and apparatus, and in the celebrated and much-considered Telephone cases, 126 U. S., 1, 532, the question of the patentability of process was discussed and the principle stated with great fulness and clearness by the late Chief Justice Waite. In the course of his elaborate opinion he said:

"In this art, or, what is the same thing under the patent law, this process, this way of transmitting speech, electricity, one of the forces of nature, is employed; but electricity left to itself will not do what is wanted. The art consists in so controlling the force as to make it accomplish the purpose. It had long been believed that if the vibrations of air caused by the voice in speaking could be re-
286 produced at a distance by means of electricity the speech itself would be reproduced and understood. How to do it was the question." And after stating that Bell had devised a way in which the necessary changes of intensity could be made and speech actually transmitted, the chief justice proceeded to say: "In doing this, both discovery and invention, in the popular sense of those terms, were involved; discovery in finding the art and invention in devising the means of making it useful. For such discoveries and such inventions the law has given the discoverer and inventor the right to a patent—as discoverer, for the useful art, process, method of doing a thing he has found; and, as inventor, for the means he has devised to make his discovery one of actual value." And he then proceeds to declare that an art—a process—which is useful, is as much the subject of a patent as a machine, manufacture, or composition of matter, and that of this there can be no doubt, and he refers to the previous cases upon the subject.

Without referring to other authority, it is clear, we think, upon the authorities to which we have referred, that the claim 5 in the patent under consideration is not merely, as contended by the defendant, a claim for the function of a machine, but is for a process in the operation of which a machine is used as one of the essential means to produce the desired result. That result being new and useful, it was the proper subject for a patent.

3 and 4. The third and fourth errors assigned relate to the question of the want of novelty by reason of the alleged anticipation by prior patents and of public and common use of the combination covered by claims 1, 2, and 4, and also by reason of the practice of the process covered by claim 5, with the knowledge of Jones, the patentee, years before the application by Jones for his patent on the Palmer press.

Before referring to the evidence in the case it may be proper to state the general principles or presumptions that arise upon the grant of the patent alleged to have been infringed, and upon whom, in such case as this, the burden of proof rests.

287 It is a general principle that a patent is *prima facie* evidence of its own validity, and that it was regularly issued, and the burden of proving the want of novelty in the invention covered by it is on the party seeking to establish that fact. Singer Manf. Co. *vs.* Brill, 7 U. S. App., 601. Consequently the want of novelty in the invention is matter of defense, unless it appears on the face of the patent that a device is without novelty or invention. Fruit Packing Co. *vs.* Cassidy, 7 U. S. App., 424. Therefore, when the Patent Office grants a patent for a device which accomplishes the same result as a prior patent, though according to a different method or process, the latter patent is to be taken as evidence of a determination by the

office that the latter invention is of value and does not conflict with or infringe the prior patent; and this presumption will be indulged until overcome by satisfactory evidence to the contrary. Packard vs. Lacing Stud Co., 33 U. S. App., 306; Boyden Power Brake Co., 25 U. S. App., 475.

The witnesses examined in the case have very fully and clearly explained the operation of the press, embodying claims 1, 2, and 4, and the manner of manipulating, arranging, and compacting the printed sheets of paper, preparatory for the binder, described in claim 5, and have shown wherein these several claims were for valuable and substantial improvements upon all former devices known and used in the art of bookbinding, especially intended for dry-pressing the printed sheets, and effacing therefrom the impressions produced by printing. The state of the art prior to and at the date of the patent in question is stated by Mr. Jones himself, the patentee, who was examined as a witness. He is a skilled bookbinder and printer, of large and varied experience in the art, and he describes the former process of preparing the printed sheets for the binder thus:

"The sheets were taken, after being printed, and dried. The drying was done by laying them over a peel and hung up on poles near the ceiling of the room. They were then taken to a table and laid out flat, averaging from one to six sheets, and were laid be-
288 tween fuller or glazed boards alternately. They were then laid into a large screw-press in bunches about an inch and a half or two inches in thickness, and then a cherry board was placed on them, and so on alternately until the press was filled, when a force of hands, consisting of eight or ten persons, would apply the pressure by means of a long iron lever. The sheets were then allowed to remain in the press over night, and the press was emptied the next morning in the same manner that it had been filled—that is, the sheets and fuller or glazed boards were piled up on a table and the operators proceeded to take out the flat pressed sheets, laying them to one side the pile and laying the boards off on another pile. This was all done before the folding of the sheets." In answer to another interrogatory he says: "The fuller boards, probably more commonly known in the trade as glazed boards, they being a board about the thickness of a heavy card-board and made of some very hard fibre, and being a hard board with a finished surface they act as a hard substance placed between two rough, soft, yielding substances, and the sheets being placed from one to six between said boards it gives a comparatively solid surface interposed between the yielding surface of the sheets, whereby by using pressure and allowing that pressure to remain continuously on the sheets and boards while in press from twelve to twenty-four hours it smooths out the indentations or impressions made by the printing on the sheets." The pressure referred to could be produced either by screw power worked by hand or by a hydraulic press.

A full statement of the operation of dry-pressing under the Jones patent is given by Mr. Robertson, examined as an expert witness on the part of the complainants. He is a patent solicitor and mechanical expert, with practical knowledge of printing and bookbinding.

In describing and explaining the invention of Jones covered by the patent in question this witness says: "The invention described in said patent and illustrated in the drawings and covered by the claims referred to in the question is a process for
289 treating folded printed sheets, whereby the impressions made in the letter-press printing process are flattened out, so that the paper will resume its original smoothness or substantially so, which process is carried out in such a manner that the operator can be continually putting in the signatures or printed matter and removing them in tied-up bundles, whereby with one press a much larger number of signatures can be pressed and at a very much reduced cost for labor over that of the process previously employed. The improvement also consists in a means for carrying out this process, which means is shown in the drawings, and more particularly in that part which is shown to the left hand of Fig. 1 and details in Fig. 3 and 4. Previous to the invention of Mr. Jones, as described in said patent, it was the custom to press printed sheets by inserting them between heavy paper boards, sometimes called 'fuller-boards,' but generally now called 'glazed boards,' and putting said boards, with the printed papers between them, into a powerful press, by which pressure was produced on said boards by various means, sometimes by means of screw pressure, sometimes by hydraulic pressure. After the pressure was produced on the paper it was continued by allowing the press to remain with its pressure on to its fullest extent for ten or twelve hours or more, say from one night to the next morning, when the pressure was removed, the papers and boards taken from the press and separated by removing the boards from the pile of combined boards and paper, and putting the boards on one side on one pile and making another pile of the printed papers. This was necessarily comparatively a slow process, inasmuch as with one press only as much printed paper as the press would hold when put between the boards could be pressed in about ten or twelve hours, so that where much work had to be done a number of such presses were necessary. It was also costly as to labor, because the sheets had to be placed between the boards and removed therefrom afterwards, which took much time, especially where, as in the case of fine work, only one sheet was placed between two boards, and
290 when this was done comparatively few sheets could be pressed at once, because the boards took up much more room than the paper did, they being quite thick.

"By the process set forth in this patent the printed sheets are not allowed to remain in the press for any considerable length of time, but only long enough for the operator to tie up the bundle, when they are immediately removed, the entire process of putting the paper into the press, tying it up in the bundle, and removing it therefrom taking but a few minutes. * * * A large number of bundles may be pressed and tied up in the course of a day and left tied up betwe-n the boards with the pressure upon them as long as is thought necessary 'o smooth out the impressions produced by the printing press or until the signatures may be wanted by the binder to complete the operation of making the book for which the signa-

tures are printed. The printed paper or signatures are thus allowed to remain for a considerable time tied up in bundles, which time may be from twenty-four hours to three or four days and may extend to a year or more, the longer the better, as it is upon the time in which the bundles remain tied up subject to pressure between the boards that the smoothness of the printed paper depends, the mere pressure produced by the press in the short time the paper remains in it having comparatively little effect upon the impression produced by the printing press. The pressure of the press and the mere tying up would produce but little effect if the signatures were immediately untied as soon as they were removed from the press, and the long-continued pressure after the bundle has left the press is therefore an essential part of the process and without which it would not be much of a success."

The witness proceeds at great length and with fulness and particularity to show the operation and the value of the Jones patent over and as compared with the pre-existing methods of accomplishing the objects of the patent, and he shows that the process and method of operation under the Jones patent is not only better than the prior method of dry-pressing, but is a novel and valuable
291 improvement in the art. The testimony of this witness is amply supported by the testimony of the expert witnesses Grier, De Vinne, Nicholson, Penicks, and Suydam, all witnesses of high and unquestioned qualification, well acquainted with the former state of the art of bookbinding and the appliances used, and quite familiar with the value and decided improvement in the art effected by the patent issued to Jones.

The defendant not only sought to throw doubt upon the question of the novelty of the invention of Jones, and thus to defeat the claims of his patent, but attempted to show, even conceding his invention, that neither of the claims in the patent was patentable, and that there was a want of substantial improvement upon the old or former methods or process of dry-pressing in the art of bookbinding; but the testimony to which we have already referred would seem to be ample to refute this contention on the part of the defendant.

The witness who testified in support of this contention of the defendant is Mr. Hood. He is a patent solicitor, but neither a bookbinder nor a printer, and only has such knowledge of those arts as he has gathered in a general way by observation and reading. He, however, expresses a very decided opinion against the novelty, usefulness, and patentability of Jones's inventions covered by the patent No. 204,741; but no other of the expert witnesses examined in the cause expresses any such opinion. Indeed, Mr. Hood himself, in attempting to analyze the several claims of the patent and to describe the scope and operation of them, does not very materially differ from the other expert witnesses, though he does materially differ from them as to the conclusion at which he arrives.

There is nothing in the evidence that is sufficient to support the third and fourth assignment of error by the defendant.

5 and 6. Under the fifth assignment of error it is urged that claim 4 of the patent is void because of ambiguity, and under the

sixth assignment of error it is contended that the single ma-
292 chine used by the defendant, in view of the preceding state of the art, did not infringe either of the claims 1, 2, and 4.

We perceive no such ambiguity in claim 4 as to require it to be declared void for that cause. The purpose of that claim, as stated by Mr. Hood, is to provide for the combination with the press bed of two alternative forms of guides for centering the sheets in the press, or, as stated by expert Robertson, the two parts designated in the claim are substantially equivalent to each other, and either can be used for the purpose of supporting the signatures with equal facility.

As to the question of infringement, the testimony in the case leaves no doubt on that subject. The infringement was of the construction of the press under claims 1, 2, and 4 and in the use of the process described in claim 5. The testimony of Jones, the patentee, and of several other witnesses clearly establish the fact of infringement, and though the press operated by the defendant was manufactured by and purchased from the Seybold company of manufacturers and he purchased and operated only a single press, still, if that press or machine was so constructed as to embrace and to be operated upon the essential principles of the press or machine covered by the patent issued to Jones, notwithstanding some change in the location, arrangement, and management of parts, there was an infringement, for which the party operating the machine would be responsible. Mere superficial dissimilarity in construction, which is most that is shown or that can be contended for in this case, will not protect against infringement; but the difference must be substantial rather than formal. Sessions *vs.* Romadka, 145 U. S., 29; National Cash Register Co. *vs.* Boston Cash Indicator & Record Co., 156 U. S., 502; Western Elec. Co. *vs.* Sperry Elec. Co., 18 U. S. App., 177. In this case the proof is clear that the machine or press used by the defendant, obtained from the Seybold Manufacturing Co., was substantially the same as that secured by the patent to Jones, and therefore such use was an infringement of that patent,
293 and the defendant is responsible for that use as an infringer from the time that the press was commenced to be used or operated by him to the time it was destroyed by fire.

7. In the view we have of this case, the seventh error assigned becomes immaterial, and we make no further reference thereto.

8. The only other question remaining for consideration is that relating to the measure of damages, gains, and profits and the principle upon which damages, gains, and profits in such case as the present should be ascertained and assessed.

The auditor in his report states that he did not find in the cause evidence sufficient to enable him to assess damages to the complainants by reason of the infringement; but he has stated an account of gains, profits, and advantages derived by the defendant from the use of the machine and process' from September, 1893, to the 10th of February, 1895, when the press or machine was destroyed by fire. During all the time of the use of the machine and process the defendant was the public printer for the State of Pennsylvania, and

it was in the performance of the work of such public printer that the machine and process were used. The auditor ascertained and reported that the defendant had realized advantages in the use of the machine and process as savings in the cost of labor the sum of $2,782.50, and as savings in waste of paper the sum of $709.20, making a total saving of $3,491.70, which he reported as the gains and profits that accrued to the defendant.

The method of ascertainment adopted by the auditor to reach the result reported by him is supposed to be in accordance with settled authority, and especially the decision of the Supreme Court in Tilghman *vs.* Proctor, 125 U. S., 136. In that case it was held that upon a bill in equity for infringing a patent, if the defendant has gained an advantage by using the plaintiff's invention, that advantage, whether by way of gains or savings, is the measure of the profits to be accounted for, even if from other causes the business in which
the invention was employed by the defendant did not result
294 in profits, and if the use of a patented process produced a definite saving in the cost of manufacture he must account to the patentee for the amount so saved; and in the case of McCreary *vs.* Penn. Canal Co., 141 U. S., 459, it was held that in a suit in equity for an infringement, in estimating the profits the defendant had made by the use of the plaintiff's invention, where the device was a mere improvement upon what was known before and was open to the defendant to use, the plaintiff was limited to such profits as had arisen from the use of the improvement over what the defendant might have made by the use of that or any other device without the use of the plaintiff's invention. These two cases, it would seem, furnished the auditor with the principles upon which he proceeded in stating the account in this case.

It is certainly true that there is great difficulty in arriving at precise accuracy in stating an account of the savings, gains, and profits in such case as the present; but where the master or auditor has fully examined and collated the facts of the case and made careful deductions therefrom, as would seem to have been done in this case, and the court below, upon hearing, has ratified and confirmed the finding and account of the auditor, the reasonable presumption is that the conclusion reached is just and proper, and an appellate court will not be disposed to disturb that conclusion unless the evidence clearly requires it to be done. In this case we do not perceive wherein any injustice has been done the defendant by the findings and conclusion of the auditor. The allowance of interest on the amount of the assessment from the time of bringing in the report and account was manifestly right, and upon a full review of the whole case our opinion is that the decree appealed from must be affirmed, and it is so ordered. Decree affirmed.

295 TUESDAY, *February 6th, A. D.* 1900.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. Hickok Manufacturing Company. } No. 903. January Term, 1900.

Appeal from the supreme court of the District of Columbia.

This cause came on to be heard on the transcript of record from the supreme court of the District of Columbia, and was argued by counsel. On consideration whereof it is now here ordered, adjudged, and decreed by this court that the decree of the said supreme court in this cause be, and the same is hereby, affirmed with costs.

Per MR. CHIEF JUSTICE ALVEY.

February 6, 1900.

TUESDAY, *May 1st, A. D.* 1900.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK MANUFACTURING Company. } No. 903.

On motion of Mr. Charles E. Riordon, of counsel for the appellant in the above-entitled cause, it is ordered by the court that said appellant be allowed an appeal to the Supreme Court of the United States on giving bond in the sum of five hundred dollars.

296 In the Court of Appeals of the District of Columbia.

CLARENCE M. BUSCH, Appellant,
vs.
JOSHUA W. JONES and THE W. O. HICKOK Manufacturing Company, Appellees. } No. 903. October Term, 1899.

Bond.

Know all men by these presents that we, Clarence M. Busch, the appellant above named, and the American Surety Company of New York, N. Y., and branch office at Washington, D. C., are held and firmly bound unto the above-named J. W. Jones and the W. O. Hickok Manufacturing Company in the sum of five hundred ($500) dollars, to be paid to the said J. W. Jones and the W. O. Hickok Manufacturing Company; for the payment of which, well and truly to be made, we bind ourselves and each of us and our legal representatives, jointly and severally, by these presents.

Sealed with our seals and dated the eight day of June, 1900.

Whereas the above-named Clarence M. Busch has prosecuted an appeal to the Supreme Court of the United States of America to reverse the decree rendered in the above-entitled suit by the Court of Appeals of the District of Columbia:

297 Now, therefore, the condition of this obligation is such that if the above-named Clarence M. Busch shall pay all costs of

said appellees if he fail to make said appeal good, then this obligation shall be void; otherwise the same shall be and remain in full force and virtue.

CLARENCE M. BUSCH,
By GEORGE J. MURRAY,
His Attorney.

Sealed and delivered in presence of—
M. K. GUILFORD.

AMERICAN SURETY COMPANY
OF NEW YORK,
By JNO. S. LOUD,
Resident Vice-President.

[Seal American Surety Co., N. Y.]

Attest: ADOLPH DAMMANN,
Resident Ass't Secretary.

5 cents U. S. internal-revenue stamps.

Bond approved.
R. H. ALVEY, *Ch. Justice.*

(Endorsed:) Court of Appeals, District of Columbia. Clarence M. Busch, appellant, *vs.* Joshua W. Jones and The W. O. Hickok Manufacturing Co., appellees. Bond on appeal to Sup. Court U. S. Court of Appeals, District of Columbia. Filed Jun- 13, 1900. Robert Willett, clerk.

298 UNITED STATES OF AMERICA, *ss:*

To Joshua W. Jones and the W. O. Hickok Manufacturing Company, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, at Washington, within 30 days from the date hereof, pursuant to an order allowing an appeal, filed in the clerk's office of the Court of Appeals of the District of Columbia, wherein Clarence M. Busch is appellant and you are appellees, to show cause, if any there be, why the decree rendered against the appellant should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the Honorable Richard H. Alvey, Chief Justice of the Court of Appeals of the District of Columbia, this thirteenth day of June, in the year of our Lord one thousand nine hundred.

R. H. ALVEY,
Chief Justice of the Court of Appeals of the District of Columbia.

Without waiving objections, service accepted this 15th day of June, 1900.

M. W. JACOBS,
Attorney for Joshua W. Jones and the W. O. Hickok Mfg. Co.

[Endorsed:] Court of Appeals, District of Columbia. Filed Jun. 18, 1900. Robert Willett, clerk.

299 Court of Appeals of the District of Columbia.

I, Robert Willett, clerk of the Court of Appeals of the District of Columbia, do hereby certify that the foregoing printed and typewritten pages, numbered from 1 to 298, inclusive, contain a true copy of the transcript of record and proceedings of said Court of Appeals in the case of Clarence M. Busch, appellant, *vs.* Joshua W. Jones and The W. O. Hickok Manufacturing Company, No. 903, January term, 1900, as the same remains upon the files and records of said Court of Appeals.

Seal Court of Appeals, District of Columbia.

In testimony whereof I hereunto subscribe my name and affix the seal of said Court of Appeals, at the city of Washington, this 18 day of June, A. D. 1900.

ROBERT WILLETT,
Clerk of the Court of Appeals of the District of Columbia.

Endorsed on cover: File No. 17,816. District of Columbia Court of Appeals. Term No., 96. Clarence M. Busch, appellant, *vs.* Joshua W. Jones and The W. O. Hickok Manufacturing Company. Filed June 27, 1900.